SEQUENCE LISTING

<110> Ruvkun, Gary
Kimura, Koutarou
Patterson, Garth
Ogg, Scott
Paradis, Suzanne
Tissenbaum, Heidi
Morris, Jason
Koweek, Allison

<120> THERAPEUTIC AND DIAGNOSTIC TOOLS FOR
IMPAIRED GLUCOSE TOLERANCE CONDITIONS

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Asn Pro Asp Leu Glu Ile Gly Leu Asp Lys Leu Ser Val Ile Arg Asn
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Arg Gly Ala Cys Glu Glu Asp Lys Gly Glu Ser Lys Cys His Tyr Leu
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Ser Asn Thr Thr Cys Gln Lys Ser Cys Ala Tyr Asp Arg Leu Leu Pro
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<212> PRT
<213> Caenorhabditis elegans

<400> 15
Lys Pro Ala Met Ala His Arg Asp Ile Lys Ser Lys Asn Ile Met Val

```
 1               5                  10                  15
Lys Asn Asp Leu Thr Cys Ala Ile Gly Asp Leu Gly Leu Ser Leu
            20                  25                  30
```

<210> 16
<211> 72
<212> PRT
<213> Caenorhabditis elegans

<400> 16

```
Ile Pro Tyr Ile Glu Trp Thr Asp Arg Asp Pro Gln Asp Ala Gln Met
 1               5                  10                  15
Phe Asp Val Val Cys Thr Arg Arg Leu Arg Pro Thr Glu Asn Pro Leu
            20                  25                  30
Trp Lys Asp His Pro Glu Met Lys His Ile Met Glu Ile Ile Lys Thr
        35                  40                  45
Cys Trp Asn Gly Asn Pro Ser Ala Arg Phe Thr Ser Tyr Ile Cys Arg
    50                  55                  60
Lys Arg Met Asp Glu Arg Gln Gln
65                  70
```

<210> 17
<211> 150
<212> PRT
<213> Caenorhabditis elegans

<400> 17

```
Tyr Phe Glu Ser Val Asp Arg Phe Leu Tyr Ser Cys Val Gly Tyr Ser
 1               5                  10                  15
Val Ala Thr Tyr Ile Met Gly Ile Lys Asp Arg His Ser Asp Asn Leu
            20                  25                  30
Met Leu Thr Glu Asp Gly Lys Tyr Val His Ile Asp Phe Gly His Ile
        35                  40                  45
Leu Gly His Gly Lys Thr Lys Leu Gly Ile Gln Arg Asp Arg Gln Pro
    50                  55                  60
Phe Ile Leu Thr Glu His Phe Met Thr Val Ile Arg Ser Gly Lys Ser
65                  70                  75                  80
Val Asp Gly Asn Ser His Glu Leu Gln Lys Phe Lys Thr Leu Cys Val
                85                  90                  95
Glu Ala Tyr Glu Val Met Trp Asn Asn Arg Asp Leu Phe Val Ser Leu
            100                 105                 110
Phe Thr Leu Met Leu Gly Met Glu Leu Pro Glu Leu Ser Thr Lys Ala
        115                 120                 125
Asp Leu Asp His Leu Lys Lys Thr Leu Phe Cys Asn Gly Glu Ser Lys
    130                 135                 140
Glu Glu Ala Arg Lys Phe
145                 150
```

<210> 18
<211> 113
<212> PRT
<213> Caenorhabditis elegans

<400> 18

```
Ser Pro Leu Asp Pro Val Tyr Lys Leu Gly Glu Met Ile Ile Asp Lys
```

```
 1               5                  10                  15
Ala Ile Val Leu Gly Ser Ala Lys Arg Pro Leu Met Leu His Trp Lys
            20                  25                  30
Asn Lys Asn Pro Lys Ser Asp Leu His Leu Pro Phe Cys Ala Met Ile
        35                  40                  45
Phe Lys Asn Gly Asp Asp Leu Arg Gln Asp Met Leu Val Leu Gln Val
    50                  55                  60
Leu Glu Val Met Asp Asn Ile Trp Lys Ala Ala Asn Ile Asp Cys Cys
65                  70                  75                  80
Leu Asn Pro Tyr Ala Val Leu Pro Met Gly Glu Met Ile Gly Ile Ile
                85                  90                  95
Glu Val Val Pro Asn Cys Lys Thr Ile Phe Glu Ile Gln Val Gly Thr
            100                 105                 110
Gly
```

<210> 19
<211> 106
<212> PRT
<213> Caenorhabditis elegans

<400> 19

```
Leu Ala Phe Val Trp Thr Asp Arg Glu Asn Phe Ser Glu Leu Tyr Val
 1               5                  10                  15
Met Leu Glu Lys Trp Lys Pro Pro Ser Val Ala Ala Ala Leu Thr Leu
            20                  25                  30
Leu Gly Lys Arg Cys Thr Asp Arg Val Ile Arg Lys Phe Ala Val Glu
        35                  40                  45
Lys Leu Asn Glu Gln Leu Ser Pro Val Thr Phe His Leu Phe Ile Leu
    50                  55                  60
Pro Leu Ile Gln Ala Leu Lys Tyr Glu Pro Arg Ala Gln Ser Glu Val
65                  70                  75                  80
Gly Met Met Leu Leu Thr Arg Ala Leu Cys Asp Tyr Arg Ile Gly His
                85                  90                  95
Arg Leu Phe Trp Leu Leu Arg Ala Glu Ile
            100                 105
```

<210> 20
<211> 139
<212> PRT
<213> Caenorhabditis elegans

<400> 20

```
Glu Tyr Trp Ile Val Thr Glu Phe His Glu Arg Leu Ser Leu Tyr Glu
 1               5                  10                  15
Leu Leu Lys Asn Asn Val Ile Ser Ile Thr Ser Ala Asn Arg Ile Ile
            20                  25                  30
Met Ser Met Ile Asp Gly Leu Gln Phe Leu His Asp Asp Arg Pro Tyr
        35                  40                  45
Phe Phe Gly His Pro Lys Lys Pro Ile Ile His Arg Asp Ile Lys Ser
    50                  55                  60
Lys Asn Ile Leu Val Lys Ser Asp Met Thr Thr Cys Ile Ala Asp Phe
65                  70                  75                  80
Gly Leu Ala Arg Ile Tyr Ser Tyr Asp Ile Glu Gln Ser Asp Leu Leu
                85                  90                  95
Gly Gln Val Gly Thr Lys Arg Tyr Met Ser Pro Glu Met Leu Glu Gly
```

```
            100                 105                 110
Ala Thr Glu Phe Thr Pro Thr Ala Phe Lys Ala Met Asp Val Tyr Ser
        115                 120                 125
Met Gly Leu Val Met Trp Glu Val Ile Ser Arg
    130                 135


<210> 21
<211> 61
<212> PRT
<213> Caenorhabditis elegans

<400> 21
Ile Gly Phe Asp Pro Thr Ile Gly Arg Met Arg Asn Tyr Val Val Ser
 1               5                  10                  15
Lys Lys Glu Arg Pro Gln Trp Arg Asp Glu Ile Ile Lys His Glu Tyr
            20                  25                  30
Met Ser Leu Leu Lys Lys Val Thr Glu Glu Met Trp Asp Pro Glu Ala
        35                  40                  45
Cys Ala Arg Ile Thr Ala Gly Cys Ala Phe Ala Arg Val
    50                  55                  60


<210> 22
<211> 20
<212> PRT
<213> Caenorhabditis elegans

<400> 22
Pro Ile Thr Asp Phe Gln Leu Ile Ser Lys Gly Arg Phe Gly Lys Val
 1               5                  10                  15
Phe Lys Ala Gln
            20


<210> 23
<211> 163
<212> PRT
<213> Caenorhabditis elegans

<400> 23
Thr Asp Ser Glu Thr Arg Ser Arg Phe Ser Leu Gly Trp Tyr Asn Asn
 1               5                  10                  15
Pro Asn Arg Ser Pro Gln Thr Ala Glu Val Arg Gly Leu Ile Gly Lys
            20                  25                  30
Gly Val Arg Phe Tyr Leu Leu Ala Gly Glu Val Tyr Val Glu Asn Leu
        35                  40                  45
Cys Asn Ile Pro Val Phe Val Gln Ser Ile Gly Ala Asn Met Lys Asn
    50                  55                  60
Gly Phe Gln Leu Asn Thr Val Ser Lys Leu Pro Pro Thr Gly Thr Met
65                  70                  75                  80
Lys Val Phe Asp Met Arg Leu Phe Ser Lys Gln Leu Arg Thr Ala Ala
                85                  90                  95
Glu Lys Thr Tyr Gln Asp Val Tyr Cys Leu Ser Arg Met Cys Thr Val
            100                 105                 110
Arg Val Ser Phe Cys Lys Gly Trp Gly Glu His Tyr Arg Arg Ser Thr
        115                 120                 125
Val Leu Arg Ser Pro Val Trp Phe Gln Ala His Leu Asn Asn Pro Met
```

```
    130                 135                 140
His Trp Val Asp Ser Val Leu Thr Cys Met Gly Ala Pro Pro Arg Ile
145                 150                 155                 160
Cys Ser Ser
```

<210> 24
<211> 44
<212> PRT
<213> Caenorhabditis elegans

<400> 24
```
Arg Ala Phe Arg Phe Pro Val Ile Arg Tyr Glu Ser Gln Val Lys Ser
 1               5                  10                  15
Ile Leu Thr Cys Arg His Ala Phe Asn Ser His Ser Arg Asn Val Cys
            20                  25                  30
Leu Asn Pro Tyr His Tyr Arg Trp Val Glu Leu Pro
        35                  40
```

<210> 25
<211> 38
<212> PRT
<213> Caenorhabditis elegans

<400> 25
```
Val Glu Tyr Glu Glu Ser Pro Ser Trp Leu Lys Leu Ile Tyr Tyr Glu
 1               5                  10                  15
Glu Gly Thr Met Ile Gly Glu Lys Ala Asp Val Glu Gly His His Cys
            20                  25                  30
Leu Ile Asp Gly Phe Thr
        35
```

<210> 26
<211> 60
<212> PRT
<213> Caenorhabditis elegans

<400> 26
```
Asn Leu Ala Glu Thr Gly His Ser Lys Ile Met Arg Ala Ala His Lys
 1               5                  10                  15
Val Ser Asn Pro Glu Ile Gly Tyr Cys Cys His Pro Thr Glu Tyr Asp
            20                  25                  30
Tyr Ile Lys Leu Ile Tyr Val Asn Arg Asp Gly Arg Val Ser Ile Ala
        35                  40                  45
Asn Val Asn Gly Met Ile Ala Lys Lys Cys Gly Cys
    50                  55                  60
```

<210> 27
<211> 20
<212> PRT
<213> Caenorhabditis elegans

<400> 27
```
Asp Trp Ile Val Ala Pro Pro Arg Tyr Asn Ala Tyr Met Cys Arg Gly
```

```
 1               5                   10                  15
Asp Cys His Tyr
            20
```

<210> 28
<211> 43
<212> PRT
<213> Caenorhabditis elegans

<400> 28

```
Val Cys Asn Ala Glu Ala Gln Ser Lys Gly Cys Cys Leu Tyr Asp Leu
 1               5                   10                  15
Glu Ile Glu Phe Glu Lys Ile Gly Trp Asp Trp Ile Val Ala Pro Pro
            20                  25                  30
Arg Tyr Asn Ala Tyr Met Cys Arg Gly Asp Cys
        35                  40
```

<210> 29
<211> 70
<212> PRT
<213> Caenorhabditis elegans

<400> 29

```
Asp Cys His Tyr Asn Ala His His Phe Asn Leu Ala Glu Thr Gly His
 1               5                   10                  15
Ser Lys Ile Met Arg Ala Ala His Lys Val Ser Asn Pro Glu Ile Gly
            20                  25                  30
Tyr Cys Cys His Pro Thr Glu Tyr Asp Tyr Ile Lys Leu Ile Tyr Val
        35                  40                  45
Asn Arg Asp Gly Arg Val Ser Ile Ala Asn Val Asn Gly Met Ile Ala
    50                  55                  60
Lys Lys Cys Gly Cys Ser
65                  70
```

<210> 30
<211> 35
<212> PRT
<213> Caenorhabditis elegans

<400> 30

```
Cys Cys Leu Tyr Asp Leu Glu Ile Glu Phe Glu Lys Ile Gly Trp Asp
 1               5                   10                  15
Trp Ile Val Ala Pro Pro Arg Tyr Asn Ala Tyr Met Cys Arg Gly Asp
            20                  25                  30
Cys His Tyr
        35
```

<210> 31
<211> 23
<212> DNA
<213> Artificial Sequence

<220>
<223> Degenerate probe

<221> misc_feature
<222> (1)...(23)
<223> n = A,T,C or G

<400> 31
ggntgggayt rnrtnrtngc ncc 23

<210> 32
<211> 18
<212> DNA
<213> Artificial Sequence

<220>
<223> Degenerate probe

<221> misc_feature
<222> (1)...(18)
<223> n = A,T,C or G

<400> 32
tgytgynnnc cnacngar 18

<210> 33
<211> 127
<212> PRT
<213> Caenorhabditis elegans

<400> 33
Lys Phe His Glu Trp Ala Ala Gln Ile Cys Asp Gly Met Ala Tyr Leu
1 5 10 15
Glu Ser Leu Lys Phe Cys His Arg Asp Leu Ala Ala Arg Asn Cys Met
20 25 30
Ile Asn Arg Asp Glu Thr Val Lys Ile Gly Asp Phe Gly Met Ala Arg
35 40 45
Asp Leu Phe Tyr His Asp Tyr Tyr Lys Pro Ser Gly Lys Arg Met Met
50 55 60
Pro Val Arg Trp Met Ser Pro Glu Ser Leu Lys Asp Gly Lys Phe Asp
65 70 75 80
Ser Lys Ser Asp Val Trp Ser Phe Gly Val Val Leu Tyr Glu Met Val
85 90 95
Thr Leu Gly Ala Gln Pro Tyr Ile Gly Leu Ser Asn Asp Glu Val Leu
100 105 110
Asn Tyr Ile Gly Met Ala Arg Lys Val Ile Lys Lys Pro Glu Cys
115 120 125

<210> 34
<211> 131
<212> PRT
<213> Caenorhabditis elegans

<400> 34
Asn Thr Thr Cys Gln Lys Ser Cys Ala Tyr Asp Arg Leu Leu Pro Thr
1 5 10 15
Lys Glu Ile Gly Pro Gly Cys Asp Ala Asn Gly Asp Arg Cys His Asp
20 25 30
Gln Cys Val Gly Gly Cys Glu Arg Val Asn Asp Ala Thr Ala Cys His
35 40 45

Ala Cys Lys Asn Val Tyr His Lys Gly Lys Cys Ile Glu Lys Cys Asp
    50   55   60
Ala His Leu Tyr Leu Leu Leu Gln Arg Arg Cys Val Thr Arg Glu Gln
65   70   75   80
Cys Leu Gln Leu Asn Pro Val Leu Ser Asn Lys Thr Val Pro Ile Lys
                85   90   95
Ala Thr Ala Gly Leu Cys Ser Asp Lys Cys Pro Asp Gly Tyr Gln Ile
            100   105   110
Asn Pro Asp Asp His Arg Glu Cys Arg Lys Cys Val Gly Lys Cys Glu
        115   120   125
Ile Val Cys
    130

<210> 35
<211> 103
<212> PRT
<213> Caenorhabditis elegans

<400> 35
Phe Asp Gln Lys Ala Cys Glu Ser Leu Val Lys Lys Leu Lys Asp Lys
1   5   10   15
Lys Asn Asp Leu Gln Asn Leu Ile Asp Val Val Leu Ser Lys Gly Thr
            20   25   30
Lys Tyr Thr Gly Cys Ile Thr Ile Pro Arg Thr Leu Asp Gly Arg Leu
        35   40   45
Gln Val His Gly Arg Lys Gly Phe Pro His Val Val Tyr Gly Lys Leu
    50   55   60
Trp Arg Phe Asn Glu Met Thr Lys Asn Glu Thr Arg His Val Asp His
65   70   75   80
Cys Lys His Ala Phe Glu Met Lys Ser Asp Met Val Cys Val Asn Pro
                85   90   95
Tyr His Tyr Glu Ile Val Ile
            100

<210> 36
<211> 79
<212> PRT
<213> Caenorhabditis elegans

<400> 36
Asn Arg Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro Val
1   5   10   15
Ala Phe Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser Tyr
            20   25   30
Lys Lys Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro Val
        35   40   45
Phe Val Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys Lys
    50   55   60
Asp Lys Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe
65   70   75

<210> 37
<211> 106
<212> PRT
<213> Caenorhabditis elegans

<400> 37
Lys Lys Thr Thr Thr Arg Arg Asn Ala Trp Gly Asn Met Ser Tyr Ala
 1   5   10   15
Glu Leu Ile Thr Thr Ala Ile Met Ala Ser Pro Glu Lys Arg Leu Thr
            20   25   30
Leu Ala Gln Val Tyr Glu Trp Met Val Gln Asn Val Pro Tyr Phe Arg
        35   40   45
Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly Trp Lys Asn Ser Ile Arg
    50   55   60
His Asn Leu Ser Leu His Ser Arg Phe Met Arg Ile Gln Asn Glu Gly
65   70   75   80
Ala Gly Lys Ser Ser Trp Trp Val Ile Asn Pro Asp Ala Lys Pro Gly
                85   90   95
Met Asn Pro Arg Arg Thr Arg Glu Arg Ser
            100   105

<210> 38
<211> 60
<212> PRT
<213> Caenorhabditis elegans

<400> 38
Glu Ile Lys Leu Ser Asp Phe Lys His Gln Leu Phe Glu Leu Ile Ala
 1   5   10   15
Pro Met Lys Trp Gly Thr Tyr Ser Val Lys Pro Gln Asp Tyr Val Phe
            20   25   30
Arg Gln Leu Asn Asn Phe Gly Glu Ile Glu Val Ile Phe Asn Asp Asp
        35   40   45
Gln Pro Leu Ser Lys Leu Glu Leu His Gly Thr Phe
    50   55   60

<210> 39
<211> 2784
<212> DNA
<213> Caenorhabditis elegans

<400> 39
atgaagctaa tagcaacttc tcttctagtt cccgacgagc acacaccgat gatgtcacca 60
gtgaatacaa ctacaaagat tctacaacgg agtggtatta aaatggaaat cccgccatat 120
ttggatccag acagtcagga tgatgacccg gaagatggtg tcaactaccc ggatccagat 180
ttatttgaca caaaaaacac aaatatgacc gagtacgatt tggatgtgtt gaagcttgga 240
aaaccagcag tagatgaagc acggaaaaag atcgaagttc ccgacgctag tgcgccgcca 300
aacaaaattg tagaatattt gatgtattat agaacgttaa aagaaagtga actcatacaa 360
ctgaatgcgt atcggacaaa acgaaatcga ttatcgttga acttggtcaa aaacaatatt 420
gatcgagagt tcgaccaaaa agcttgcgag tccctggtga aaaaattgaa ggataagaag 480
aatgatctcc agaacctgat tgatgtggtt ctttcaaaag gtacaaaata taccggttgc 540
attacaattc caaggacact tgatggccgg ttacaggtcc acggaagaaa aggtttccct 600
cacgtagtct atggcaaact gtggaggttt aatgaaatga caaaaaacga aacgcgtcat 660
gtggaccact gcaagcacgc atttgaaatg aaaagtgaca tggtatgcgt gaatccctat 720
cactacgaaa ttgtcattgg aactatgatt gttgggcaga gggatcatga caatcgagat 780
atgccgccgc cacatcaacg ctaccacact ccaggtcggc aggatccagt tgacgatatg 840
agtagattta taccaccagc ttccattcgt ccgcctccga tgaacatgca cacaaggcct 900
cagcctatgc ctcaacaatt gccttcagtt ggcgcaacgt ttgcccatcc tctcccacat 960
caggcgccac ataacccagg ggtttcacat ccgtactcca ttgctccaca gacccattac 1020
ccgttgaaca tgaacccaat tccgcaaatg ccgcaaatgc cacaaatgcc accacctctc 1080
catcagggat atggaatgaa tgggccgagt tgctcttcag aaaacaacaa tccattccac 1140

caaaatcacc attataatga tattagccat ccaaatcact attcctacga ctgtggtccg 1200
aacttgtacg ggtttccaac tccttatccg gattttcacc atcctttcaa tcagcaacca 1260
caccagccgc cacaactatc acaaaaccat acgtcccaac aaggcagtca tcaaccaggg 1320
caccaaggtc aggtaccgaa tgatccacca atttcaagac cagtgttaca accatcaaca 1380
gtcaccttgg acgtgttccg tcggtactgt agacagacat ttggaaatcg atttttgaa 1440
ggagaaagtg aacaatccgg cgcaataatt cggtctagta acaaattcat tgaagaattt 1500
gattcgccga tttgtggtgt gacagttgtt cgaccgcgga tgacagacgg tgaggttttg 1560
gagaacatca tgccggaaga tgcaccatat catgacattt gcaagttcat tttgaggctc 1620
acatcagaaa gtgtaacttt ctcaggagag gggccagaag ttagtgattt gaacgaaaaa 1680
tggggaacaa ttgtgtacta tgagaaaaat ttgcaaattg gcgagaaaaa atgttcgaga 1740
ggaaatttcc acgtggatgg cggattcatt tgctctgaga atcgttacag tctcggactt 1800
gagccaaatc caattagaga accagtggcg tttaaagttc gtaaagcaat agtggatgga 1860
attcgctttt cctacaaaaa agacgggagt gtttggcttc aaaaccgcat gaagtacccg 1920
gtatttgtca cttctgggta tctcgacgag caatcaggag gcctaaagaa ggataaagtg 1980
cacaaagttt acggatgtgc gtctatcaaa acgtttggct tcaacgtttc caaacaaatc 2040
atcagagacg cgcttctttc caagcaaatg gcaacaatgt acttgcaagg aaaattgact 2100
ccgatgaatt atatctacga gaagaagact caggaagagc tgcgaaggga agcaacacgc 2160
accactgatt cattggccaa gtactgttgt gtccgtgtct cgttctgcaa aggatttgga 2220
gaagcatacc cagaacgccc gtcaattcat gattgtccag tttggattga gttgaaaatc 2280
aacattgcct acgatttcat ggattcaatc tgccagtaca taaccaactg cttcgagccg 2340
ctaggaatgg aagattttgc aaaattggga atcaacgtca gtgatgacta aatgataact 2400
tttttcactc accctactag atactgattt agtcttattc caaatcatcc aacgatatca 2460
aacttttttcc tttgaacttt gcatactatg ttatcacaag ttccaagcag tttcaataca 2520
aacataggat atgttaacaa cttttgataa gaatcaagtt accaactgtt cattgtgagc 2580
tttgagctgt atagaaggac aatgtatccc atacctcaat ctttaatagt catcagtcac 2640
tggtcccgca ccaatttttt cgattcgcat atgtcatata ttgcaccgtg gccctttta 2700
ttgtaacttt taatatattt tcttcccaac ttgtgaatat gattgatgaa ccaccatttt 2760
gagtaataaa tgtatttttt gtgg 2784

<210> 40
<211> 796
<212> PRT
<213> Caenorhabditis elegans

<400> 40
Met Lys Leu Ile Ala Thr Ser Leu Leu Val Pro Asp Glu His Thr Pro
 1   5   10   15
Met Met Ser Pro Val Asn Thr Thr Thr Lys Ile Leu Gln Arg Ser Gly
            20   25   30
Ile Lys Met Glu Ile Pro Pro Tyr Leu Asp Pro Asp Ser Gln Asp Asp
        35   40   45
Asp Pro Glu Asp Gly Val Asn Tyr Pro Asp Pro Asp Leu Phe Asp Thr
    50   55   60
Lys Asn Thr Asn Met Thr Glu Tyr Asp Leu Asp Val Leu Lys Leu Gly
65   70   75   80
Lys Pro Ala Val Asp Glu Ala Arg Lys Lys Ile Glu Val Pro Asp Ala
                85   90   95
Ser Ala Pro Pro Asn Lys Ile Val Glu Tyr Leu Met Tyr Tyr Arg Thr
            100   105   110
Leu Lys Glu Ser Glu Leu Ile Gln Leu Asn Ala Tyr Arg Thr Lys Arg
        115   120   125
Asn Arg Leu Ser Leu Asn Leu Val Lys Asn Asn Ile Asp Arg Glu Phe
    130   135   140
Asp Gln Lys Ala Cys Glu Ser Leu Val Lys Lys Leu Lys Asp Lys Lys
145   150   155   160
Asn Asp Leu Gln Asn Leu Ile Asp Val Val Leu Ser Lys Gly Thr Lys
                165   170   175
Tyr Thr Gly Cys Ile Thr Ile Pro Arg Thr Leu Asp Gly Arg Leu Gln

```
                180                 185                 190
Val His Gly Arg Lys Gly Phe Pro His Val Val Tyr Gly Lys Leu Trp
        195                 200                 205
Arg Phe Asn Glu Met Thr Lys Asn Glu Thr Arg His Val Asp His Cys
    210                 215                 220
Lys His Ala Phe Glu Met Lys Ser Asp Met Val Cys Val Asn Pro Tyr
225                 230                 235                 240
His Tyr Glu Ile Val Ile Gly Thr Met Ile Val Gly Gln Arg Asp His
                245                 250                 255
Asp Asn Arg Asp Met Pro Pro Pro His Gln Arg Tyr His Thr Pro Gly
            260                 265                 270
Arg Gln Asp Pro Val Asp Asp Met Ser Arg Phe Ile Pro Pro Ala Ser
        275                 280                 285
Ile Arg Pro Pro Pro Met Asn Met His Thr Arg Pro Gln Pro Met Pro
    290                 295                 300
Gln Gln Leu Pro Ser Val Gly Ala Thr Phe Ala His Pro Leu Pro His
305                 310                 315                 320
Gln Ala Pro His Asn Pro Gly Val Ser His Pro Tyr Ser Ile Ala Pro
                325                 330                 335
Gln Thr His Tyr Pro Leu Asn Met Asn Pro Ile Pro Gln Met Pro Gln
            340                 345                 350
Met Pro Gln Met Pro Pro Pro Leu His Gln Gly Tyr Gly Met Asn Gly
        355                 360                 365
Pro Ser Cys Ser Ser Glu Asn Asn Asn Pro Phe His Gln Asn His His
    370                 375                 380
Tyr Asn Asp Ile Ser His Pro Asn His Tyr Ser Tyr Asp Cys Gly Pro
385                 390                 395                 400
Asn Leu Tyr Gly Phe Pro Thr Pro Tyr Pro Asp Phe His His Pro Phe
                405                 410                 415
Asn Gln Gln Pro His Gln Pro Pro Gln Leu Ser Gln Asn His Thr Ser
            420                 425                 430
Gln Gln Gly Ser His Gln Pro Gly His Gln Gly Gln Val Pro Asn Asp
        435                 440                 445
Pro Pro Ile Ser Arg Pro Val Leu Gln Pro Ser Thr Val Thr Leu Asp
    450                 455                 460
Val Phe Arg Arg Tyr Cys Arg Gln Thr Phe Gly Asn Arg Phe Phe Glu
465                 470                 475                 480
Gly Glu Ser Glu Gln Ser Gly Ala Ile Ile Arg Ser Ser Asn Lys Phe
                485                 490                 495
Ile Glu Glu Phe Asp Ser Pro Ile Cys Gly Val Thr Val Val Arg Pro
            500                 505                 510
Arg Met Thr Asp Gly Glu Val Leu Glu Asn Ile Met Pro Glu Asp Ala
        515                 520                 525
Pro Tyr His Asp Ile Cys Lys Phe Ile Leu Arg Leu Thr Ser Glu Ser
    530                 535                 540
Val Thr Phe Ser Gly Glu Gly Pro Glu Val Ser Asp Leu Asn Glu Lys
545                 550                 555                 560
Trp Gly Thr Ile Val Tyr Tyr Glu Lys Asn Leu Gln Ile Gly Glu Lys
                565                 570                 575
Lys Cys Ser Arg Gly Asn Phe His Val Asp Gly Gly Phe Ile Cys Ser
            580                 585                 590
Glu Asn Arg Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro
        595                 600                 605
Val Ala Phe Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser
    610                 615                 620
Tyr Lys Lys Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro
625                 630                 635                 640
Val Phe Val Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys
```

```
                645                 650                 655
Lys Asp Lys Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe
            660                 665                 670
Gly Phe Asn Val Ser Lys Gln Ile Ile Arg Asp Ala Leu Leu Ser Lys
        675                 680                 685
Gln Met Ala Thr Met Tyr Leu Gln Gly Lys Leu Thr Pro Met Asn Tyr
    690                 695                 700
Ile Tyr Glu Lys Lys Thr Gln Glu Glu Leu Arg Arg Glu Ala Thr Arg
705                 710                 715                 720
Thr Thr Asp Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys
                725                 730                 735
Lys Gly Phe Gly Glu Ala Tyr Pro Glu Arg Pro Ser Ile His Asp Cys
            740                 745                 750
Pro Val Trp Ile Glu Leu Lys Ile Asn Ile Ala Tyr Asp Phe Met Asp
        755                 760                 765
Ser Ile Cys Gln Tyr Ile Thr Asn Cys Phe Glu Pro Leu Gly Met Glu
    770                 775                 780
Asp Phe Ala Lys Leu Gly Ile Asn Val Ser Asp Asp
785                 790                 795
```

<210> 41
<211> 858
<212> PRT
<213> Caenorhabditis elegans

<400> 41

```
Met Gly Asp His His Asn Leu Thr Gly Leu Pro Gly Thr Ser Ile Pro
 1               5                  10                  15
Pro Gln Phe Asn Tyr Ser Gln Pro Gly Thr Ser Thr Gly Gly Pro Leu
            20                  25                  30
Tyr Gly Gly Lys Pro Ser His Gly Leu Glu Asp Ile Pro Asp Val Glu
        35                  40                  45
Glu Tyr Glu Arg Asn Leu Leu Gly Ala Gly Ala Gly Phe Asn Leu Leu
    50                  55                  60
Asn Val Gly Asn Met Ala Asn Val Pro Asp Glu His Thr Pro Met Met
65                  70                  75                  80
Ser Pro Val Asn Thr Thr Thr Lys Ile Leu Gln Arg Ser Gly Ile Lys
                85                  90                  95
Met Glu Ile Pro Pro Tyr Leu Asp Pro Asp Ser Gln Asp Asp Asp Pro
            100                 105                 110
Glu Asp Gly Val Asn Tyr Pro Asp Pro Asp Leu Phe Asp Thr Lys Asn
        115                 120                 125
Thr Asn Met Thr Glu Tyr Asp Leu Asp Val Leu Lys Leu Gly Lys Pro
    130                 135                 140
Ala Val Asp Glu Ala Arg Lys Lys Ile Glu Val Pro Asp Ala Ser Ala
145                 150                 155                 160
Pro Pro Asn Lys Ile Val Glu Tyr Leu Met Tyr Tyr Arg Thr Leu Lys
                165                 170                 175
Glu Ser Glu Leu Ile Gln Leu Asn Ala Tyr Arg Thr Lys Arg Asn Arg
            180                 185                 190
Leu Ser Leu Asn Leu Val Lys Asn Asn Ile Asp Arg Glu Phe Asp Gln
        195                 200                 205
Lys Ala Cys Glu Ser Leu Val Lys Lys Leu Lys Asp Lys Lys Asn Asp
    210                 215                 220
Leu Gln Asn Leu Ile Asp Val Val Leu Ser Lys Gly Thr Lys Tyr Thr
225                 230                 235                 240
Gly Cys Ile Thr Ile Pro Arg Thr Leu Asp Gly Arg Leu Gln Val His
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Gly Arg Lys Gly Phe Pro His Val Val Tyr Gly Lys Leu Trp Arg Phe
260 265 270
Asn Glu Met Thr Lys Asn Glu Thr Arg His Val Asp His Cys Lys His
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Ala Phe Glu Met Lys Ser Asp Met Val Cys Val Asn Pro Tyr His Tyr
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Glu Ile Val Ile Gly Thr Met Ile Val Gly Gln Arg Asp His Asp Asn
305 310 315 320
Arg Asp Met Pro Pro Pro His Gln Arg Tyr His Thr Pro Gly Arg Gln
325 330 335
Asp Pro Val Asp Asp Met Ser Arg Phe Ile Pro Pro Ala Ser Ile Arg
340 345 350
Pro Pro Pro Met Asn Met His Thr Arg Pro Gln Pro Met Pro Gln Gln
355 360 365
Leu Pro Ser Val Gly Ala Thr Phe Ala His Pro Leu Pro His Gln Ala
370 375 380
Pro His Asn Pro Gly Val Ser His Pro Tyr Ser Ile Ala Pro Gln Thr
385 390 395 400
His Tyr Pro Leu Asn Met Asn Pro Ile Pro Gln Met Pro Gln Met Pro
405 410 415
Gln Met Pro Pro Pro Leu His Gln Gly Tyr Gly Met Asn Gly Pro Ser
420 425 430
Cys Ser Ser Glu Asn Asn Asn Pro Phe His Gln Asn His His Tyr Asn
435 440 445
Asp Ile Ser His Pro Asn His Tyr Ser Tyr Asp Cys Gly Pro Asn Leu
450 455 460
Tyr Gly Phe Pro Thr Pro Tyr Pro Asp Phe His His Pro Phe Asn Gln
465 470 475 480
Gln Pro His Gln Pro Pro Gln Leu Ser Gln Asn His Thr Ser Gln Gln
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Gly Ser His Gln Pro Gly His Gln Gly Gln Val Pro Asn Asp Pro Pro
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Ile Ser Arg Pro Val Leu Gln Pro Ser Thr Val Thr Leu Asp Val Phe
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Arg Arg Tyr Cys Arg Gln Thr Phe Gly Asn Arg Phe Phe Glu Gly Glu
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Ser Glu Gln Ser Gly Ala Ile Ile Arg Ser Ser Asn Lys Phe Ile Glu
545 550 555 560
Glu Phe Asp Ser Pro Ile Cys Gly Val Thr Val Val Arg Pro Arg Met
565 570 575
Thr Asp Gly Glu Val Leu Glu Asn Ile Met Pro Glu Asp Ala Pro Tyr
580 585 590
His Asp Ile Cys Lys Phe Ile Leu Arg Leu Thr Ser Glu Ser Val Thr
595 600 605
Phe Ser Gly Glu Gly Pro Glu Val Ser Asp Leu Asn Glu Lys Trp Gly
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625 630 635 640
Ser Arg Gly Asn Phe His Val Asp Gly Gly Phe Ile Cys Ser Glu Asn
645 650 655
Arg Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro Val Ala
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Phe Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser Tyr Lys
675 680 685
Lys Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro Val Phe
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Val Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys Lys Asp

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740 745 750
Ala Thr Met Tyr Leu Gln Gly Lys Leu Thr Pro Met Asn Tyr Ile Tyr
755 760 765
Glu Lys Lys Thr Gln Glu Glu Leu Arg Arg Glu Ala Thr Arg Thr Thr
770 775 780
Asp Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys Lys Gly
785 790 795 800
Phe Gly Glu Ala Tyr Pro Glu Arg Pro Ser Ile His Asp Cys Pro Val
805 810 815
Trp Ile Glu Leu Lys Ile Asn Ile Ala Tyr Asp Phe Met Asp Ser Ile
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Ala Lys Leu Gly Ile Asn Val Ser Asp Asp
850 855

<210> 42
<211> 892
<212> PRT
<213> Caenorhabditis elegans

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35 40 45
Glu Tyr Glu Arg Asn Leu Leu Gly Ala Gly Ala Gly Phe Asn Leu Leu
50 55 60
Asn Val Gly Asn Met Ala Asn Glu Phe Lys Pro Ile Ile Thr Leu Asp
65 70 75 80
Thr Lys Pro Pro Arg Asp Ala Asn Lys Ser Leu Ala Phe Asn Gly Gly
85 90 95
Leu Lys Leu Ile Thr Pro Lys Thr Glu Val Pro Asp Glu His Thr Pro
100 105 110
Met Met Ser Pro Val Asn Thr Thr Thr Lys Ile Leu Gln Arg Ser Gly
115 120 125
Ile Lys Met Glu Ile Pro Pro Tyr Leu Asp Pro Asp Ser Gln Asp Asp
130 135 140
Asp Pro Glu Asp Gly Val Asn Tyr Pro Asp Pro Asp Leu Phe Asp Thr
145 150 155 160
Lys Asn Thr Asn Met Thr Glu Tyr Asp Leu Asp Val Leu Lys Leu Gly
165 170 175
Lys Pro Ala Val Asp Glu Ala Arg Lys Lys Ile Glu Val Pro Asp Ala
180 185 190
Ser Ala Pro Pro Asn Lys Ile Val Glu Tyr Leu Met Tyr Tyr Arg Thr
195 200 205
Leu Lys Glu Ser Glu Leu Ile Gln Leu Asn Ala Tyr Arg Thr Lys Arg
210 215 220
Asn Arg Leu Ser Leu Asn Leu Val Lys Asn Asn Ile Asp Arg Glu Phe
225 230 235 240
Asp Gln Lys Ala Cys Glu Ser Leu Val Lys Lys Leu Lys Asp Lys Lys

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                245                 250                 255
Asn Asp Leu Gln Asn Leu Ile Asp Val Val Leu Ser Lys Gly Thr Lys
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Tyr Thr Gly Cys Ile Thr Ile Pro Arg Thr Leu Asp Gly Arg Leu Gln
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Val His Gly Arg Lys Gly Phe Pro His Val Val Tyr Gly Lys Leu Trp
    290                 295                 300
Arg Phe Asn Glu Met Thr Lys Asn Glu Thr Arg His Val Asp His Cys
305                 310                 315                 320
Lys His Ala Phe Glu Met Lys Ser Asp Met Val Cys Val Asn Pro Tyr
                325                 330                 335
His Tyr Glu Ile Val Ile Gly Thr Met Ile Val Gly Gln Arg Asp His
            340                 345                 350
Asp Asn Arg Asp Met Pro Pro Pro His Gln Arg Tyr His Thr Pro Gly
        355                 360                 365
Arg Gln Asp Pro Val Asp Asp Met Ser Arg Phe Ile Pro Pro Ala Ser
    370                 375                 380
Ile Arg Pro Pro Pro Met Asn Met His Thr Arg Pro Gln Pro Met Pro
385                 390                 395                 400
Gln Gln Leu Pro Ser Val Gly Ala Thr Phe Ala His Pro Leu Pro His
                405                 410                 415
Gln Ala Pro His Asn Pro Gly Val Ser His Pro Tyr Ser Ile Ala Pro
            420                 425                 430
Gln Thr His Tyr Pro Leu Asn Met Asn Pro Ile Pro Gln Met Pro Gln
        435                 440                 445
Met Pro Gln Met Pro Pro Pro Leu His Gln Gly Tyr Gly Met Asn Gly
    450                 455                 460
Pro Ser Cys Ser Ser Glu Asn Asn Asn Pro Phe His Gln Asn His His
465                 470                 475                 480
Tyr Asn Asp Ile Ser His Pro Asn His Tyr Ser Tyr Asp Cys Gly Pro
                485                 490                 495
Asn Leu Tyr Gly Phe Pro Thr Pro Tyr Pro Asp Phe His His Pro Phe
            500                 505                 510
Asn Gln Gln Pro His Gln Pro Pro Gln Leu Ser Gln Asn His Thr Ser
        515                 520                 525
Gln Gln Gly Ser His Gln Pro Gly His Gln Gly Gln Val Pro Asn Asp
    530                 535                 540
Pro Pro Ile Ser Arg Pro Val Leu Gln Pro Ser Thr Val Thr Leu Asp
545                 550                 555                 560
Val Phe Arg Arg Tyr Cys Arg Gln Thr Phe Gly Asn Arg Phe Phe Glu
                565                 570                 575
Gly Glu Ser Glu Gln Ser Gly Ala Ile Ile Arg Ser Ser Asn Lys Phe
            580                 585                 590
Ile Glu Glu Phe Asp Ser Pro Ile Cys Gly Val Thr Val Val Arg Pro
        595                 600                 605
Arg Met Thr Asp Gly Glu Val Leu Glu Asn Ile Met Pro Glu Asp Ala
    610                 615                 620
Pro Tyr His Asp Ile Cys Lys Phe Ile Leu Arg Leu Thr Ser Glu Ser
625                 630                 635                 640
Val Thr Phe Ser Gly Glu Gly Pro Glu Val Ser Asp Leu Asn Glu Lys
                645                 650                 655
Trp Gly Thr Ile Val Tyr Tyr Glu Lys Asn Leu Gln Ile Gly Glu Lys
            660                 665                 670
Lys Cys Ser Arg Gly Asn Phe His Val Asp Gly Gly Phe Ile Cys Ser
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Glu Asn Arg Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro
    690                 695                 700
Val Ala Phe Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser
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705                 710                 715                 720
Tyr Lys Lys Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro
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Val Phe Val Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys
            740                 745                 750
Lys Asp Lys Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe
        755                 760                 765
Gly Phe Asn Val Ser Lys Gln Ile Ile Arg Asp Ala Leu Leu Ser Lys
    770                 775                 780
Gln Met Ala Thr Met Tyr Leu Gln Gly Lys Leu Thr Pro Met Asn Tyr
785                 790                 795                 800
Ile Tyr Glu Lys Lys Thr Gln Glu Glu Leu Arg Arg Glu Ala Thr Arg
                805                 810                 815
Thr Thr Asp Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys
            820                 825                 830
Lys Gly Phe Gly Glu Ala Tyr Pro Glu Arg Pro Ser Ile His Asp Cys
        835                 840                 845
Pro Val Trp Ile Glu Leu Lys Ile Asn Ile Ala Tyr Asp Phe Met Asp
    850                 855                 860
Ser Ile Cys Gln Tyr Ile Thr Asn Cys Phe Glu Pro Leu Gly Met Glu
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Asp Phe Ala Lys Leu Gly Ile Asn Val Ser Asp Asp
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<210> 43
<211> 3499
<212> DNA
<213> Caenorhabditis elegans

<400> 43

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tcatcccctc ctcttactcc ttctttctcg tccgctacta ctgtatcttc tggacatcta 180
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ttggctgaaa ttcccgaaga cgttatgatg gagatgctgg tagatcaggg aactgatgca 360
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<210> 44
<211> 2704
<212> DNA
<213> Caenorhabditis elegans

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cagttccgtg gccagttcca ttggaggcgg agctcaatgc tctccgtgcg cgtcgggctc 240
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<210> 45
<211> 510
<212> PRT
<213> Caenorhabditis elegans

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35 40 45
Arg Asp Arg Cys Asn Thr Trp Pro Met Arg Arg Pro Gln Leu Glu Pro
50 55 60
Pro Leu Asn Ser Ser Pro Ile Ile His Glu Gln Ile Pro Glu Glu Asp
65 70 75 80
Ala Asp Leu Tyr Gly Ser Asn Glu Gln Cys Gly Gln Leu Gly Gly Ala
85 90 95
Ser Ser Asn Gly Ser Thr Ala Met Leu His Thr Pro Asp Gly Ser Asn
100 105 110
Ser His Gln Thr Ser Phe Pro Ser Asp Phe Arg Met Ser Glu Ser Pro
115 120 125
Asp Asp Thr Val Ser Gly Lys Lys Thr Thr Thr Arg Arg Asn Ala Trp
130 135 140
Gly Asn Met Ser Tyr Ala Glu Leu Ile Thr Thr Ala Ile Met Ala Ser
145 150 155 160
Pro Glu Lys Arg Leu Thr Leu Ala Gln Val Tyr Glu Trp Met Val Gln
165 170 175
Asn Val Pro Tyr Phe Arg Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly
180 185 190

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Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met
        195                 200                 205
Arg Ile Gln Asn Glu Gly Ala Gly Lys Ser Ser Trp Trp Val Ile Asn
    210                 215                 220
Pro Asp Ala Lys Pro Gly Met Asn Pro Arg Arg Thr Arg Glu Arg Ser
225                 230                 235                 240
Asn Thr Ile Glu Thr Thr Thr Lys Ala Gln Leu Glu Lys Ser Arg Arg
                245                 250                 255
Gly Ala Lys Lys Arg Ile Lys Glu Arg Ala Leu Met Gly Ser Leu His
            260                 265                 270
Ser Thr Leu Asn Gly Asn Ser Ile Ala Gly Ser Ile Gln Thr Ile Ser
        275                 280                 285
His Asp Leu Tyr Asp Asp Asp Ser Met Gln Gly Ala Phe Asp Asn Val
    290                 295                 300
Pro Ser Ser Phe Arg Pro Arg Thr Gln Ser Asn Leu Ser Ile Pro Gly
305                 310                 315                 320
Ser Ser Ser Arg Val Ser Pro Ala Ile Gly Ser Asp Ile Tyr Asp Asp
                325                 330                 335
Leu Glu Phe Pro Ser Trp Val Gly Glu Ser Val Pro Ala Ile Pro Ser
            340                 345                 350
Asp Ile Val Asp Arg Thr Asp Gln Met Arg Ile Asp Ala Thr Thr His
        355                 360                 365
Ile Gly Gly Val Gln Ile Lys Gln Glu Ser Lys Pro Ile Lys Thr Glu
    370                 375                 380
Pro Ile Ala Pro Pro Pro Ser Tyr His Glu Leu Asn Ser Val Arg Gly
385                 390                 395                 400
Ser Cys Ala Gln Asn Pro Leu Leu Arg Asn Pro Ile Val Pro Ser Thr
                405                 410                 415
Asn Phe Lys Pro Met Pro Leu Pro Gly Ala Tyr Gly Asn Tyr Gln Asn
            420                 425                 430
Gly Gly Ile Thr Pro Ile Asn Trp Leu Ser Thr Ser Asn Ser Ser Pro
        435                 440                 445
Leu Pro Gly Ile Gln Ser Cys Gly Ile Val Ala Ala Gln His Thr Val
    450                 455                 460
Ala Ser Ser Ser Ala Leu Pro Ile Asp Leu Glu Asn Leu Thr Leu Pro
465                 470                 475                 480
Asp Gln Pro Leu Met Asp Thr Met Asp Val Asp Ala Leu Ile Arg His
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<210> 46
<211> 509
<212> PRT
<213> Caenorhabditis elegans

<400> 46

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Gln Leu Pro His Met Gln Gln Leu Pro Gln Pro Leu Leu Asn Leu Asn
        35                  40                  45
Met Thr Thr Leu Thr Ser Ser Gly Ser Ser Val Ala Ser Ser Ile Gly
    50                  55                  60
Gly Gly Ala Gln Cys Ser Pro Cys Ala Ser Gly Ser Ser Thr Ala Ala
65                  70                  75                  80
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Ser Val Pro Cys Ser Ser Ser Gly Met Thr Leu Gly Met Ser Leu Asn
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Leu Ser Gln Gly Gly Gly Pro Met Pro Ala Lys Lys Lys Arg Cys Arg
115 120 125
Lys Lys Pro Thr Asp Gln Leu Ala Gln Lys Lys Pro Asn Pro Trp Gly
130 135 140
Glu Glu Ser Tyr Ser Asp Ile Ile Ala Lys Ala Leu Glu Ser Ala Pro
145 150 155 160
Asp Gly Arg Leu Lys Leu Asn Glu Ile Tyr Gln Trp Phe Ser Asp Asn
165 170 175
Ile Pro Tyr Phe Gly Glu Arg Ser Ser Pro Glu Glu Ala Ala Gly Trp
180 185 190
Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met Arg
195 200 205
Ile Gln Asn Glu Gly Ala Gly Lys Ser Ser Trp Trp Val Ile Asn Pro
210 215 220
Asp Ala Lys Pro Gly Met Asn Pro Arg Arg Thr Arg Glu Arg Ser Asn
225 230 235 240
Thr Ile Glu Thr Thr Thr Lys Ala Gln Leu Glu Lys Ser Arg Arg Gly
245 250 255
Ala Lys Lys Arg Ile Lys Glu Arg Ala Leu Met Gly Ser Leu His Ser
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Asp Leu Tyr Asp Asp Asp Ser Met Gln Gly Ala Phe Asp Asn Val Pro
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Ser Ser Phe Arg Pro Arg Thr Gln Ser Asn Leu Ser Ile Pro Gly Ser
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340 345 350
Ile Val Asp Arg Thr Asp Gln Met Arg Ile Asp Ala Thr Thr His Ile
355 360 365
Gly Gly Val Gln Ile Lys Gln Glu Ser Lys Pro Ile Lys Thr Glu Pro
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Ile Ala Pro Pro Pro Ser Tyr His Glu Leu Asn Ser Val Arg Gly Ser
385 390 395 400
Cys Ala Gln Asn Pro Leu Leu Arg Asn Pro Ile Val Pro Ser Thr Asn
405 410 415
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420 425 430
Gly Ile Thr Pro Ile Asn Trp Leu Ser Thr Ser Asn Ser Ser Pro Leu
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Pro Gly Ile Gln Ser Cys Gly Ile Val Ala Ala Gln His Thr Val Ala
450 455 460
Ser Ser Ser Ala Leu Pro Ile Asp Leu Glu Asn Leu Thr Leu Pro Asp
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<213> Caenorhabditis elegans

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35 40 45
Glu Asn Gly Lys Gly Ser Leu Leu Leu Glu Asn Glu Gly Val Ala Asp
50 55 60
Ile Ile Thr Met Cys Pro Phe Gly Glu Val Ile Ser Val Val Phe Pro
65 70 75 80
Trp Phe Leu Ala Asn Val Arg Thr Ser Leu Glu Ile Lys Leu Ser Asp
85 90 95
Phe Lys His Gln Leu Phe Glu Leu Ile Ala Pro Met Lys Trp Gly Thr
100 105 110
Tyr Ser Val Lys Pro Gln Asp Tyr Val Phe Arg Gln Leu Asn Asn Phe
115 120 125
Gly Glu Ile Glu Val Ile Phe Asn Asp Asp Gln Pro Leu Ser Lys Leu
130 135 140
Glu Leu His Gly Thr Phe Pro Met Leu Phe Leu Tyr Gln Pro Asp Gly
145 150 155 160
Ile Asn Arg Asp Lys Glu Leu Met Ser Asp Ile Ser His Cys Leu Gly
165 170 175
Tyr Ser Leu Asp Lys Leu Glu Glu Ser Leu Asp Glu Glu Leu Arg Gln
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Phe Arg Ala Ser Leu Trp Ala Arg Thr Lys Lys Thr Cys Leu Thr Arg
195 200 205
Gly Leu Glu Gly Thr Ser His Tyr Ala Phe Pro Glu Glu Gln Tyr Leu
210 215 220
Cys Val Gly Glu Ser Cys Pro Lys Asp Leu Glu Ser Lys Val Lys Ala
225 230 235 240
Ala Lys Leu Ser Tyr Gln Met Phe Trp Arg Lys Arg Lys Ala Glu Ile
245 250 255
Asn Gly Val Cys Glu Lys Met Met Lys Ile Gln Ile Glu Phe Asn Pro
260 265 270
Asn Glu Thr Pro Lys Ser Leu Leu His Thr Phe Leu Tyr Glu Met Arg
275 280 285
Lys Leu Asp Val Tyr Asp Thr Asp Asp Pro Ala Asp Glu Gly Trp Phe
290 295 300
Leu Gln Leu Ala Gly Arg Thr Thr Phe Val Thr Asn Pro Asp Val Lys
305 310 315 320
Leu Thr Ser Tyr Asp Gly Val Arg Ser Glu Leu Glu Ser Tyr Arg Cys
325 330 335
Pro Gly Phe Val Val Arg Arg Gln Ser Leu Val Leu Lys Asp Tyr Cys
340 345 350
Arg Pro Lys Pro Leu Tyr Glu Pro His Tyr Val Arg Ala His Glu Arg
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Lys Leu Ala Leu Asp Val Leu Ser Val Ser Ile Asp Ser Thr Pro Lys
370 375 380
Gln Ser Lys Asn Ser Asp Met Val Met Thr Asp Phe Arg Pro Thr Ala
385 390 395 400
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Ser Lys Ser Thr Thr Lys Val Asn Ala Gln Phe Ala Lys Trp Asn Lys
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465 470 475 480
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485 490 495
Glu Phe Glu Val Gly Trp Val Asn Met Ser Leu Thr Asp Trp Arg Asp
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Glu Leu Arg Gln Gly Gln Phe Leu Phe His Leu Trp Ala Pro Glu Pro
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Thr Ala Asn Arg Ser Arg Ile Gly Glu Asn Gly Ala Arg Ile Gly Thr
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Ser Gly Ile Val Leu Glu Glu Asp Glu Gln Arg His Val Trp Met Trp
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625 630 635 640
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Glu Lys Leu Asn Glu Gln Leu Ser Pro Val Thr Phe His Leu Phe Ile
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Val Gly Met Met Leu Leu Thr Arg Ala Leu Cys Asp Tyr Arg Ile Gly
725 730 735
His Arg Leu Phe Trp Leu Leu Arg Ala Glu Ile Ala Arg Leu Arg Asp
740 745 750
Cys Asp Leu Lys Ser Glu Glu Tyr Arg Arg Ile Ser Leu Leu Met Glu
755 760 765
Ala Tyr Leu Arg Gly Asn Glu Glu His Ile Lys Ile Ile Thr Arg Gln
770 775 780
Val Asp Met Val Asp Glu Leu Thr Arg Ile Ser Thr Leu Val Lys Gly
785 790 795 800
Met Pro Lys Asp Val Ala Thr Met Lys Leu Arg Asp Glu Leu Arg Ser
805 810 815
Ile Ser His Lys Met Glu Asn Met Asp Ser Pro Leu Asp Pro Val Tyr
820 825 830

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Arg Gln Asp Met Leu Val Leu Gln Val Leu Glu Val Met Asp Asn Ile
885 890 895
Trp Lys Ala Ala Asn Ile Asp Cys Cys Leu Asn Pro Tyr Ala Val Leu
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Pro Met Gly Glu Met Ile Gly Ile Ile Glu Val Val Pro Asn Cys Lys
915 920 925
Thr Ile Phe Glu Ile Gln Val Gly Thr Gly Phe Met Asn Thr Ala Val
930 935 940
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<220>
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ggagtgtttg gcttcaaaac cgcatgaagt acccggtatt tgtcacttct gggtatctcg 2280
acgagcaatc aggaggccta aagaaggata aagtgcacaa agtttacgga tgtgcgtcta 2340
tcaaaacgtt tggcttcaac gtttccaaac aaatcatcag agacgcgctt ctttccaagc 2400
aaatggcaac aatgtacttg caaggaaaat tgactccgat gaattatatc tacgagaaga 2460
agactcagga agagctgcga agggaagcaa cacgcaccac tgattcattg gccaagtact 2520
gttgtgtccg tgtctcgttc tgcaaaggat ttggagaagc atacccagaa cgcccgtcaa 2580
ttcatgattg tccagtttgg attgagttga aaatcaacat tgcctacgat ttcatggatt 2640
caatctgcca gtacataacc aactgcttcg agccgctagg aatggaagat tttgcaaaat 2700
tgggaatcaa cgtcagtgat gactaaatga taacttttt cactcaccct actagatact 2760
gatttagtct tattccaaat catccaacga tatcaaactt tttcctttga actttgcata 2820
ctatgttatc acaagttcca agcagtttca atacaaacat aggatatgtt aacaactttt 2880
gataagaatc aagttaccaa ctgttcattg tgagctttga gctgtataga aggacaatgt 2940
atcccatacc tcaatcttta atagtcatca gtcactggtc ccgcaccaat tttttcgatt 3000
cgcatatgtc atatattgca ccgtggccct ttttattgta acttttaata tattttcttc 3060
ccaacttgtg aatatgattg atgaaccacc attttgagta ataaatgtat tttttgtgg 3119

<210> 54
<211> 103
<212> PRT
<213> Caenorhabditis elegans

<400> 54
Lys Lys Thr Thr Thr Arg Arg Asn Ala Trp Gly Asn Met Ser Tyr Ala
1 5 10 15
Glu Leu Ile Thr Thr Ala Ile Met Ala Ser Pro Glu Lys Arg Leu Thr
20 25 30
Leu Ala Gln Val Tyr Glu Trp Met Val Gln Asn Val Pro Tyr Phe Arg
35 40 45
Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly Trp Lys Asn Ser Ile Arg
50 55 60
His Asn Leu Ser Leu His Ser Arg Phe Met Arg Ile Gln Asn Glu Gly
65 70 75 80
Ala Gly Lys Ser Ser Trp Trp Val Ile Asn Pro Asp Ala Lys Pro Gly
85 90 95
Met Asn Pro Arg Arg Thr Arg
100

<210> 55
<211> 41
<212> PRT
<213> Caenorhabditis elegans

<400> 55
Thr Phe Met Asn Thr Pro Asp Asp Val Met Met Asn Asp Asp Met Glu
1 5 10 15
Pro Ile Pro Arg Asp Arg Cys Asn Thr Trp Pro Met Arg Arg Pro Gln
20 25 30
Leu Glu Pro Pro Pro Leu Asn Ser Ser Pro
35 40

<210> 56
<211> 109

<212> PRT
<213> Caenorhabditis elegans

<400> 56
Asp Asp Thr Val Ser Gly Lys Lys Thr Thr Thr Arg Arg Asn Ala Trp
 1   5   10   15
Gly Asn Met Ser Tyr Ala Glu Leu Ile Thr Thr Ala Ile Met Ala Ser
            20   25   30
Pro Glu Lys Arg Leu Thr Leu Ala Gln Val Tyr Glu Trp Met Val Gln
        35   40   45
Asn Val Pro Tyr Phe Arg Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly
    50   55   60
Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met
65   70   75   80
Arg Ile Gln Asn Glu Gly Ala Gly Lys Ser Ser Trp Trp Val Ile Asn
                85   90   95
Pro Asp Ala Lys Pro Gly Met Asn Pro Arg Arg Thr Arg
            100   105

<210> 57
<211> 655
<212> PRT
<213> Homo sapiens

<400> 57
Met Ala Glu Ala Pro Gln Val Val Glu Ile Asp Pro Asp Phe Glu Pro
 1   5   10   15
Leu Pro Arg Pro Arg Ser Cys Thr Trp Pro Leu Pro Arg Pro Glu Phe
            20   25   30
Ser Gln Ser Asn Ser Ala Thr Ser Ser Pro Ala Pro Ser Gly Ser Ala
        35   40   45
Ala Ala Asn Pro Asp Ala Ala Ala Gly Leu Pro Ser Ala Ser Ala Ala
    50   55   60
Ala Val Ser Ala Asp Phe Met Ser Asn Leu Ser Leu Leu Glu Glu Ser
65   70   75   80
Glu Asp Phe Pro Gln Ala Pro Gly Ser Val Ala Ala Ala Val Ala Ala
                85   90   95
Ala Ala Ala Ala Ala Ala Thr Gly Gly Leu Cys Gly Asp Phe Gln Gly
            100   105   110
Pro Glu Ala Gly Cys Leu His Pro Ala Pro Pro Gln Pro Pro Pro Pro
        115   120   125
Gly Pro Val Ser Gln His Pro Pro Val Pro Pro Ala Ala Ala Gly Pro
    130   135   140
Leu Ala Gly Gln Pro Arg Lys Ser Ser Ser Ser Arg Arg Asn Ala Trp
145   150   155   160
Gly Asn Leu Ser Tyr Ala Asp Leu Ile Thr Lys Ala Ile Glu Ser Ser
                165   170   175
Ala Glu Lys Arg Leu Thr Leu Ser Gln Ile Tyr Glu Trp Met Val Lys
            180   185   190
Ser Val Pro Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala Gly
        195   200   205
Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe Ile
    210   215   220
Arg Val Gln Asn Glu Gly Thr Gly Lys Ser Ser Trp Trp Met Leu Asn
225   230   235   240
Pro Glu Gly Gly Lys Ser Gly Lys Ser Pro Arg Arg Arg Ala Ala Ser
                245   250   255

```
Met Asp Asn Asn Ser Lys Phe Ala Lys Ser Arg Ser Arg Ala Ala Lys
            260                 265                 270
Lys Lys Ala Ser Leu Gln Ser Gly Gln Glu Gly Ala Gly Asp Ser Pro
        275                 280                 285
Gly Ser Gln Phe Ser Lys Trp Pro Ala Ser Pro Gly Ser His Ser Asn
    290                 295                 300
Asp Asp Phe Asp Asn Trp Ser Thr Phe Arg Pro Arg Thr Ser Ser Asn
305                 310                 315                 320
Ala Ser Thr Ile Ser Gly Arg Leu Ser Pro Ile Met Thr Glu Gln Asp
                325                 330                 335
Asp Leu Gly Glu Gly Asp Val His Ser Met Val Tyr Pro Pro Ser Ala
            340                 345                 350
Ala Lys Met Ala Ser Thr Leu Pro Ser Leu Ser Glu Ile Ser Asn Pro
        355                 360                 365
Glu Asn Met Glu Asn Leu Leu Asp Asn Leu Asn Leu Leu Ser Ser Pro
    370                 375                 380
Thr Ser Leu Thr Val Ser Thr Gln Ser Ser Pro Gly Thr Met Met Gln
385                 390                 395                 400
Gln Thr Pro Cys Tyr Ser Phe Ala Pro Pro Asn Thr Ser Leu Asn Ser
                405                 410                 415
Pro Ser Pro Asn Tyr Gln Lys Tyr Thr Tyr Gly Gln Ser Ser Met Ser
            420                 425                 430
Pro Leu Pro Gln Met Pro Ile Gln Thr Leu Gln Asp Asn Lys Ser Ser
        435                 440                 445
Tyr Gly Gly Met Ser Gln Tyr Asn Cys Ala Pro Gly Leu Leu Lys Glu
    450                 455                 460
Leu Leu Thr Ser Asp Ser Pro Pro His Asn Asp Ile Met Thr Pro Val
465                 470                 475                 480
Asp Pro Gly Val Ala Gln Pro Asn Ser Arg Val Leu Gly Gln Asn Val
                485                 490                 495
Met Met Gly Pro Asn Ser Val Met Ser Thr Tyr Gly Ser Gln Ala Ser
            500                 505                 510
His Asn Lys Met Met Asn Pro Ser Ser His Thr His Pro Gly His Ala
        515                 520                 525
Gln Gln Thr Ser Ala Val Asn Gly Arg Pro Leu Pro His Thr Val Ser
    530                 535                 540
Thr Met Pro His Thr Ser Gly Met Asn Arg Leu Thr Gln Val Lys Thr
545                 550                 555                 560
Pro Val Gln Val Pro Leu Pro His Pro Met Gln Met Ser Ala Leu Gly
                565                 570                 575
Gly Tyr Ser Ser Val Ser Ser Cys Asn Gly Tyr Gly Arg Met Gly Leu
            580                 585                 590
Leu His Gln Glu Lys Leu Pro Ser Asp Leu Asp Gly Met Phe Ile Glu
        595                 600                 605
Arg Leu Asp Cys Asp Met Glu Ser Ile Ile Arg Asn Asp Leu Met Asp
    610                 615                 620
Gly Asp Thr Leu Asp Phe Asn Phe Asp Asn Val Leu Pro Asn Gln Ser
625                 630                 635                 640
Phe Pro His Ser Val Lys Thr Thr Thr His Ser Trp Val Ser Gly
                645                 650                 655
```

<210> 58
<211> 98
<212> PRT
<213> Caenorhabditis elegans

<400> 58

```
Lys Pro Asn Pro Trp Gly Glu Glu Ser Tyr Ser Asp Ile Ile Ala Lys
 1               5                  10                  15
Ala Leu Glu Ser Ala Pro Asp Gly Arg Leu Lys Leu Asn Glu Ile Tyr
            20                  25                  30
Gln Trp Phe Ser Asp Asn Ile Pro Tyr Phe Gly Glu Arg Ser Ser Pro
        35                  40                  45
Glu Glu Ala Ala Gly Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu
    50                  55                  60
His Ser Arg Phe Met Arg Ile Gln Asn Glu Gly Ala Gly Lys Ser Ser
65                  70                  75                  80
Trp Trp Val Ile Asn Pro Asp Ala Lys Pro Gly Met Asn Pro Arg Arg
                85                  90                  95
Thr Arg
```

<210> 59
<211> 7
<212> PRT
<213> Caenorhabditis elegans

<400> 59
Trp Lys Asn Ser Ile Arg His
 1   5

<210> 60
<211> 121
<212> PRT
<213> Caenorhabditis elegans

<400> 60
Gln Val Leu Asp Asp His Asp Tyr Gly Arg Cys Val Asp Trp Trp Gly
 1   5   10   15
Val Gly Val Val Met Tyr Glu Met Met Cys Gly Arg Leu Pro Phe Tyr
            20   25   30
Ser Lys Asp His Asn Lys Leu Phe Glu Leu Ile Met Ala Gly Asp Leu
        35   40   45
Arg Phe Pro Ser Lys Leu Ser Gln Glu Ala Arg Thr Leu Leu Thr Gly
    50   55   60
Leu Leu Val Lys Asp Pro Thr Gln Arg Leu Gly Gly Gly Pro Glu Asp
65   70   75   80
Ala Leu Glu Ile Cys Arg Ala Asp Phe Phe Arg Thr Val Asp Trp Glu
                85   90   95
Ala Thr Tyr Arg Lys Glu Ile Glu Pro Pro Tyr Lys Pro Asn Val Gln
            100   105   110
Ser Glu Thr Asp Thr Ser Tyr Phe Asp
        115   120

<210> 61
<211> 66
<212> PRT
<213> Caenorhabditis elegans

<400> 61
Thr Met Glu Asp Phe Asp Phe Leu Lys Val Leu Gly Lys Gly Thr Phe
 1   5   10   15

Gly Lys Val Ile Leu Cys Lys Glu Lys Arg Thr Gln Lys Leu Tyr Ala
            20   25   30
Ile Lys Ile Leu Lys Lys Asp Val Ile Ile Ala Arg Glu Glu Val Ala
        35   40   45
His Thr Leu Thr Glu Asn Arg Val Leu Gln Arg Cys Lys His Pro Phe
    50   55   60
Leu Thr
65

<210> 62
<211> 45
<212> PRT
<213> Caenorhabditis elegans

<400> 62
Lys Leu Glu Asn Leu Leu Leu Asp Lys Asp Gly His Ile Lys Ile Ala
 1   5   10   15
Asp Phe Gly Leu Cys Lys Glu Glu Ile Ser Phe Gly Asp Lys Thr Ser
            20   25   30
Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val
        35   40   45

<210> 63
<211> 57
<212> PRT
<213> Caenorhabditis elegans

<400> 63
Tyr Phe Gln Glu Leu Lys Tyr Ser Phe Gln Glu Gln His Tyr Leu Cys
 1   5   10   15
Phe Val Met Gln Phe Ala Asn Gly Gly Glu Leu Phe Thr His Val Arg
            20   25   30
Lys Cys Gly Thr Phe Ser Glu Pro Arg Ala Arg Phe Tyr Gly Ala Glu
        35   40   45
Ile Val Leu Ala Leu Gly Tyr Leu His
    50   55

<210> 64
<211> 59
<212> PRT
<213> Caenorhabditis elegans

<400> 64
Ser Thr Phe Ala Ile Phe Tyr Phe Gln Thr Met Leu Phe Glu Lys Pro
 1   5   10   15
Arg Pro Asn Met Phe Met Val Arg Cys Leu Gln Trp Thr Thr Val Ile
            20   25   30
Glu Arg Thr Phe Tyr Ala Glu Ser Ala Glu Val Arg Gln Arg Trp Ile
        35   40   45
His Ala Ile Glu Ser Ile Ser Lys Lys Tyr Lys
    50   55

<210> 65
<211> 33

<212> PRT
<213> Caenorhabditis elegans

<400> 65
Leu Gln Glu Leu Lys Tyr Ser Phe Gln Thr Asn Asp Arg Leu Cys Phe
 1   5   10   15
Val Met Glu Phe Ala Ile Gly Gly Asp Leu Tyr Tyr His Leu Asn Arg
            20   25   30
Glu

<210> 66
<211> 21
<212> PRT
<213> Caenorhabditis elegans

<400> 66
Val Val Ile Glu Gly Trp Leu His Lys Lys Gly Glu His Ile Arg Asn
 1   5   10   15
Trp Arg Pro Arg Phe
            20

<210> 67
<211> 26
<212> PRT
<213> Caenorhabditis elegans

<400> 67
Phe Ser Glu Pro Arg Ala Arg Phe Tyr Gly Ser Glu Ile Val Leu Ala
 1   5   10   15
Leu Gly Tyr Leu His Ala Asn Ser Ile Val
            20   25

<210> 68
<211> 39
<212> PRT
<213> Caenorhabditis elegans

<400> 68
Ile Arg Val Ser Phe Cys Lys Gly Phe Gly Glu Thr Tyr Ser Arg Leu
 1   5   10   15
Lys Val Val Asn Leu Pro Cys Trp Ile Glu Ile Ile Leu His Glu Pro
            20   25   30
Ala Asp Glu Tyr Asp Thr Val
        35

<210> 69
<211> 45
<212> PRT
<213> Caenorhabditis elegans

<400> 69
Ser Arg Asn Ser Lys Ser Ser Gln Ile Arg Asn Thr Val Gly Ala Gly
 1   5   10   15

Ile Gln Leu Ala Tyr Glu Asn Gly Glu Leu Trp Leu Thr Val Leu Thr
20 25 30
Asp Gln Ile Val Phe Val Gln Cys Pro Phe Leu Asn Gln
35 40 45

<210> 70
<211> 29
<212> PRT
<213> Caenorhabditis elegans

<400> 70
Asn Glu Met Leu Asp Pro Glu Pro Lys Tyr Pro Lys Glu Glu Lys Pro
1 5 10 15
Trp Cys Thr Ile Phe Tyr Tyr Glu Leu Thr Val Arg Val
20 25

<210> 71
<211> 29
<212> PRT
<213> Caenorhabditis elegans

<400> 71
Gln Leu Gly Lys Ala Phe Glu Ala Lys Val Pro Thr Ile Thr Ile Asp
1 5 10 15
Gly Ala Thr Gly Ala Ser Asp Glu Cys Arg Met Ser Leu
20 25

<210> 72
<211> 105
<212> PRT
<213> Caenorhabditis elegans

<400> 72
Ser Pro Asp Asp Gly Leu Leu Asp Ser Ser Glu Glu Ser Arg Arg Arg
1 5 10 15
Gln Lys Thr Cys Arg Val Cys Gly Asp His Ala Thr Gly Tyr Asn Phe
20 25 30
Asn Val Ile Thr Cys Glu Ser Cys Lys Ala Phe Phe Arg Arg Asn Ala
35 40 45
Leu Arg Pro Lys Glu Phe Lys Cys Pro Tyr Ser Glu Asp Cys Glu Ile
50 55 60
Asn Ser Val Ser Arg Arg Phe Cys Gln Lys Cys Arg Leu Arg Lys Cys
65 70 75 80
Phe Thr Val Gly Met Lys Lys Glu Trp Ile Leu Asn Glu Glu Gln Leu
85 90 95
Arg Arg Arg Lys Asn Ser Arg Leu Asn
100 105

<210> 73
<211> 89
<212> PRT
<213> Caenorhabditis elegans

<400> 73

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Leu Asp Ser Ser Glu Glu Ser Arg Arg Arg Gln Lys Thr Cys Arg Val
 1               5                  10                  15
Cys Gly Asp His Ala Thr Gly Tyr Asn Phe Asn Val Ile Thr Cys Glu
            20                  25                  30
Ser Cys Lys Ala Phe Phe Arg Arg Asn Ala Leu Arg Pro Lys Glu Phe
        35                  40                  45
Lys Cys Pro Tyr Ser Glu Asp Cys Glu Ile Asn Ser Val Ser Arg Arg
    50                  55                  60
Phe Cys Gln Lys Cys Arg Leu Arg Lys Cys Phe Thr Val Gly Met Lys
65                  70                  75                  80
Lys Glu Trp Ile Leu Asn Glu Glu Gln
                85
```

<210> 74
<211> 73
<212> PRT
<213> Caenorhabditis elegans

<400> 74
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Asp Ile Met Asn Ile Met Asp Val Thr Met Arg Arg Phe Val Lys Val
 1               5                  10                  15
Ala Lys Gly Val Pro Ala Phe Arg Glu Val Ser Gln Glu Gly Lys Phe
            20                  25                  30
Ser Leu Leu Lys Gly Gly Met Ile Glu Met Leu Thr Val Arg Gly Val
        35                  40                  45
Thr Arg Tyr Asp Ala Ser Thr Asn Ser Phe Lys Thr Pro Thr Ile Lys
    50                  55                  60
Gly Gln Asn Val Ser Val Asn Val Asp
65                  70
```

<210> 75
<211> 112
<212> PRT
<213> Caenorhabditis elegans

<400> 75
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Ser Gly Ser Leu Val Asp Leu Met Ile Lys Asn Leu Thr Ala Tyr Thr
 1               5                  10                  15
Gln Gly Leu Asn Glu Thr Val Lys Asn Arg Thr Ala Glu Leu Glu Lys
            20                  25                  30
Glu Gln Glu Lys Gly Asp Gln Leu Leu Met Glu Leu Leu Pro Lys Ser
        35                  40                  45
Val Ala Asn Asp Leu Lys Asn Gly Ile Ala Val Asp Pro Lys Val Tyr
    50                  55                  60
Glu Asn Ala Thr Ile Leu Tyr Ser Asp Ile Val Gly Phe Thr Ser Leu
65                  70                  75                  80
Cys Ser Gln Ser Gln Pro Met Glu Val Val Thr Leu Leu Ser Gly Met
                85                  90                  95
Tyr Gln Arg Phe Asp Leu Ile Ile Ser Gln Gln Gly Gly Tyr Lys Val
            100                 105                 110
```

<210> 76
<211> 107
<212> PRT
<213> Caenorhabditis elegans

<400> 76
Met Glu Thr Ile Gly Asp Ala Tyr Cys Val Ala Ala Gly Leu Pro Val
 1   5   10   15
Val Met Glu Lys Asp His Val Lys Ser Ile Cys Met Ile Ala Leu Leu
            20   25   30
Gln Arg Asp Cys Leu His His Phe Glu Ile Pro His Arg Pro Gly Thr
        35   40   45
Phe Leu Asn Cys Arg Trp Gly Phe Asn Ser Gly Pro Val Phe Ala Gly
    50   55   60
Val Ile Gly Gln Lys Ala Pro Arg Tyr Ala Cys Phe Gly Glu Ala Val
65   70   75   80
Ile Leu Ala Ser Lys Met Glu Ser Ser Gly Val Glu Asp Arg Ile Gln
                85   90   95
Met Thr Leu Ala Ser Gln Gln Leu Leu Glu Glu
            100   105

<210> 77
<211> 43
<212> PRT
<213> Caenorhabditis elegans

<400> 77
Asp Ile Leu Lys Gly Leu Glu Tyr Ile His Ala Ser Ala Ile Asp Phe
 1   5   10   15
His Gly Asn Leu Thr Leu His Asn Cys Met Leu Asp Ser His Trp Ile
            20   25   30
Val Lys Leu Ser Gly Phe Gly Val Asn Arg Leu
        35   40

<210> 78
<211> 15
<212> PRT
<213> Caenorhabditis elegans

<400> 78
Asp Met Tyr Ser Phe Gly Val Ile Leu His Glu Ile Ile Leu Lys
 1   5   10   15

<210> 79
<211> 67
<212> PRT
<213> Caenorhabditis elegans

<400> 79
Ala Ile Lys Ile Asn Val Asp Asp Pro Ala Ser Thr Glu Asn Leu Asn
 1   5   10   15
Tyr Leu Met Glu Ala Asn Ile Met Lys Asn Phe Lys Thr Asn Phe Ile
            20   25   30
Val Gln Leu Tyr Gly Val Ile Ser Thr Val Gln Pro Ala Met Val Val
        35   40   45
Met Glu Met Met Asp Leu Gly Asn Leu Arg Asp Tyr Leu Arg Ser Lys
    50   55   60
Arg Glu Asp
65

<210> 80
<211> 54
<212> PRT
<213> Caenorhabditis elegans

<400> 80
Val Ile Lys Lys Pro Glu Cys Cys Glu Asn Tyr Trp Tyr Lys Val Met
 1   5   10   15
Lys Met Cys Trp Arg Tyr Ser Pro Arg Asp Arg Pro Thr Phe Leu Gln
            20   25   30
Leu Val His Leu Leu Ala Ala Glu Ala Ser Pro Glu Phe Arg Asp Leu
        35   40   45
Ser Phe Val Leu Thr Asp
    50

<210> 81
<211> 69
<212> PRT
<213> Caenorhabditis elegans

<400> 81
Lys Gln Asp Ser Gly Met Ala Ser Glu Leu Lys Asp Ile Phe Ala Asn
 1   5   10   15
Ile His Thr Ile Thr Gly Tyr Leu Leu Val Arg Gln Ser Ser Pro Phe
            20   25   30
Ile Ser Leu Asn Met Phe Arg Asn Leu Arg Arg Ile Glu Ala Lys Ser
        35   40   45
Leu Phe Arg Asn Leu Tyr Ala Ile Thr Val Phe Glu Asn Pro Asn Leu
    50   55   60
Lys Lys Leu Phe Asp
65

<210> 82
<211> 52
<212> PRT
<213> Caenorhabditis elegans

<400> 82
Phe Pro His Leu Arg Glu Ile Thr Gly Thr Leu Leu Val Phe Glu Thr
 1   5   10   15
Glu Gly Leu Val Asp Leu Arg Lys Ile Phe Pro Asn Leu Arg Val Ile
            20   25   30
Gly Gly Arg Ser Leu Ile Gln His Tyr Ala Leu Ile Ile Tyr Arg Asn
        35   40   45
Pro Asp Leu Glu
    50

<210> 83
<211> 46
<212> PRT
<213> Caenorhabditis elegans

<400> 83
Glu Ile Gly Leu Asp Lys Leu Ser Val Ile Arg Asn Gly Gly Val Arg
 1   5   10   15

Ile Ile Asp Asn Arg Lys Leu Cys Tyr Thr Lys Thr Ile Asp Trp Lys
            20   25   30
His Leu Ile Thr Ser Ser Ile Asn Asp Val Val Val Asp Asn
        35   40   45

<210> 84
<211> 36
<212> PRT
<213> Caenorhabditis elegans

<400> 84
Tyr Asn Ala Asp Asp Trp Glu Leu Arg Gln Asp Asp Val Val Leu Gly
 1   5   10   15
Gln Gln Cys Gly Glu Gly Ser Phe Gly Lys Val Tyr Leu Gly Thr Gly
            20   25   30
Asn Asn Val Val
        35

<210> 85
<211> 24
<212> PRT
<213> Caenorhabditis elegans

<400> 85
Asp Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys Lys Gly
 1   5   10   15
Phe Gly Glu Ala Tyr Pro Glu Arg
            20

<210> 86
<211> 13
<212> PRT
<213> Caenorhabditis elegans

<400> 86
Gly Trp Asp Trp Ile Val Ala Pro Pro Arg Tyr Asn Ala
 1   5   10

<210> 87
<211> 121
<212> PRT
<213> Homo sapiens

<400> 87
Glu Val Leu Glu Asp Asn Asp Tyr Gly Arg Ala Val Asp Trp Trp Gly
 1   5   10   15
Leu Gly Val Val Met Tyr Glu Met Met Cys Gly Arg Leu Pro Phe Tyr
            20   25   30
Asn Gln Asp His Glu Lys Leu Phe Glu Leu Ile Leu Met Glu Glu Ile
        35   40   45
Arg Phe Pro Arg Thr Leu Gly Pro Glu Ala Lys Ser Leu Leu Ser Gly
    50   55   60
Leu Leu Lys Lys Asp Pro Thr Gln Arg Leu Gly Gly Gly Ser Glu Asp
65   70   75   80

Ala Lys Glu Ile Met Gln His Arg Phe Phe Ala Asn Ile Val Trp Gln
85 90 95
Asp Val Tyr Glu Lys Lys Leu Ser Pro Pro Phe Lys Pro Gln Val Thr
100 105 110
Ser Glu Thr Asp Thr Arg Tyr Phe Asp
115 120

<210> 88
<211> 121
<212> PRT
<213> Caenorhabditis elegans

<400> 88
Gln Val Leu Asp Asp His Asp Tyr Gly Arg Cys Val Asp Trp Trp Gly
1 5 10 15
Val Gly Val Val Met Tyr Glu Met Met Cys Gly Arg Leu Pro Phe Tyr
20 25 30
Ser Lys Asp His Asn Lys Leu Phe Glu Leu Ile Met Ala Gly Asp Leu
35 40 45
Arg Phe Pro Ser Lys Leu Ser Gln Glu Ala Arg Thr Leu Leu Thr Gly
50 55 60
Leu Leu Val Lys Asp Pro Thr Gln Arg Leu Gly Gly Gly Pro Glu Asp
65 70 75 80
Ala Leu Glu Ile Cys Arg Ala Asp Phe Phe Arg Thr Val Asp Trp Glu
85 90 95
Ala Thr Tyr Arg Lys Glu Ile Glu Pro Pro Tyr Lys Pro Asn Val Gln
100 105 110
Ser Glu Thr Asp Thr Ser Tyr Phe Asp
115 120

<210> 89
<211> 66
<212> PRT
<213> Homo sapiens

<400> 89
Thr Met Asn Glu Phe Glu Tyr Leu Lys Leu Leu Gly Lys Gly Thr Phe
1 5 10 15
Gly Lys Val Ile Leu Val Lys Glu Lys Ala Thr Gly Arg Tyr Tyr Ala
20 25 30
Met Lys Ile Leu Lys Lys Glu Val Ile Val Ala Lys Asp Glu Val Ala
35 40 45
His Thr Leu Thr Glu Asn Arg Val Leu Gln Asn Ser Arg His Pro Phe
50 55 60
Leu Thr
65

<210> 90
<211> 66
<212> PRT
<213> Caenorhabditis elegans

<400> 90
Thr Met Glu Asp Phe Asp Phe Leu Lys Val Leu Gly Lys Gly Thr Phe
1 5 10 15

Gly Lys Val Ile Leu Cys Lys Glu Lys Arg Thr Gln Lys Leu Tyr Ala
20 25 30
Ile Lys Ile Leu Lys Lys Asp Val Ile Ile Ala Arg Glu Glu Val Ala
35 40 45
His Thr Leu Thr Glu Asn Arg Val Leu Gln Arg Cys Lys His Pro Phe
50 55 60
Leu Thr
65

<210> 91
<211> 45
<212> PRT
<213> Homo sapiens

<400> 91
Lys Leu Glu Asn Leu Met Leu Asp Lys Asp Gly His Ile Lys Ile Thr
1 5 10 15
Asp Phe Gly Leu Cys Lys Glu Gly Ile Lys Asp Gly Ala Thr Met Lys
20 25 30
Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val
35 40 45

<210> 92
<211> 45
<212> PRT
<213> Caenorhabditis elegans

<400> 92
Lys Leu Glu Asn Leu Leu Leu Asp Lys Asp Gly His Ile Lys Ile Ala
1 5 10 15
Asp Phe Gly Leu Cys Lys Glu Glu Ile Ser Phe Gly Asp Lys Thr Ser
20 25 30
Thr Phe Cys Gly Thr Pro Glu Tyr Leu Ala Pro Glu Val
35 40 45

<210> 93
<211> 57
<212> PRT
<213> Homo sapiens

<400> 93
Phe Leu Thr Ala Leu Lys Tyr Ser Phe Gln Thr His Asp Arg Leu Cys
1 5 10 15
Phe Val Met Glu Tyr Ala Asn Gly Gly Glu Leu Phe Phe His Leu Ser
20 25 30
Arg Glu Arg Val Phe Ser Glu Asp Arg Ala Arg Phe Tyr Gly Ala Glu
35 40 45
Ile Val Ser Ala Leu Asp Tyr Leu His
50 55

<210> 94
<211> 57
<212> PRT
<213> Caenorhabditis elegans

<400> 94
Tyr Phe Gln Glu Leu Lys Tyr Ser Phe Gln Glu Gln His Tyr Leu Cys
 1   5   10   15
Phe Val Met Gln Phe Ala Asn Gly Gly Glu Leu Phe Thr His Val Arg
            20   25   30
Lys Cys Gly Thr Phe Ser Glu Pro Arg Ala Arg Phe Tyr Gly Ala Glu
        35   40   45
Ile Val Leu Ala Leu Gly Tyr Leu His
    50   55

<210> 95
<211> 59
<212> PRT
<213> Homo sapiens

<400> 95
Asn Asn Phe Ser Val Ala Gln Cys Gln Leu Met Lys Thr Glu Arg Pro
 1   5   10   15
Arg Pro Asn Thr Phe Ile Ile Arg Cys Leu Gln Trp Thr Thr Val Ile
            20   25   30
Glu Arg Thr Phe His Val Glu Thr Pro Glu Glu Arg Glu Glu Trp Ala
        35   40   45
Thr Ala Ile Gln Thr Val Ala Asp Gly Leu Lys
    50   55

<210> 96
<211> 59
<212> PRT
<213> Caenorhabditis elegans

<400> 96
Ser Thr Phe Ala Ile Phe Tyr Phe Gln Thr Met Leu Phe Glu Lys Pro
 1   5   10   15
Arg Pro Asn Met Phe Met Val Arg Cys Leu Gln Trp Thr Thr Val Ile
            20   25   30
Glu Arg Thr Phe Tyr Ala Glu Ser Ala Glu Val Arg Gln Arg Trp Ile
        35   40   45
His Ala Ile Glu Ser Ile Ser Lys Lys Tyr Lys
    50   55

<210> 97
<211> 33
<212> PRT
<213> Homo sapiens

<400> 97
Leu Thr Ala Leu Lys Tyr Ser Phe Gln Thr His Asp Arg Leu Cys Phe
 1   5   10   15
Val Met Glu Tyr Ala Asn Gly Gly Glu Leu Phe Phe His Leu Ser Arg
            20   25   30
Glu

<210> 98

<211> 33
<212> PRT
<213> Caenorhabditis elegans

<400> 98
Leu Gln Glu Leu Lys Tyr Ser Phe Gln Thr Asn Asp Arg Leu Cys Phe
 1   5   10   15
Val Met Glu Phe Ala Ile Gly Gly Asp Leu Tyr Tyr His Leu Asn Arg
            20   25   30
Glu

<210> 99
<211> 473
<212> PRT
<213> Homo sapiens

<400> 99
Met Leu Gly Thr Val Lys Met Glu Gly His Glu Thr Ser Asp Trp Asn
 1   5   10   15
Ser Tyr Tyr Ala Asp Thr Gln Glu Ala Tyr Ser Ser Val Pro Val Ser
            20   25   30
Asn Met Asn Ser Gly Leu Gly Ser Met Asn Ser Met Asn Thr Tyr Met
        35   40   45
Thr Met Asn Thr Met Thr Thr Ser Gly Asn Met Thr Pro Ala Ser Phe
    50   55   60
Asn Met Ser Tyr Ala Asn Pro Ala Leu Gly Ala Gly Leu Ser Pro Gly
65   70   75   80
Ala Val Ala Gly Met Pro Gly Gly Ser Ala Gly Ala Met Asn Ser Met
                85   90   95
Thr Ala Ala Gly Val Thr Ala Met Gly Thr Ala Leu Ser Pro Ser Gly
            100   105   110
Met Gly Ala Met Gly Ala Gln Gln Ala Ala Ser Met Met Asn Gly Leu
        115   120   125
Gly Pro Tyr Ala Ala Ala Met Asn Pro Cys Met Ser Pro Met Ala Tyr
    130   135   140
Ala Pro Ser Asn Leu Gly Arg Ser Arg Ala Gly Gly Gly Gly Asp Ala
145   150   155   160
Lys Thr Phe Lys Arg Ser Tyr Pro His Ala Lys Pro Pro Tyr Ser Tyr
                165   170   175
Ile Ser Leu Ile Thr Met Ala Ile Gln Arg Ala Pro Ser Lys Met Leu
            180   185   190
Thr Leu Ser Glu Ile Tyr Gln Trp Ile Met Asp Leu Phe Pro Tyr Tyr
        195   200   205
Arg Gln Asn Gln Gln Arg Trp Gln Asn Ser Ile Arg His Ser Leu Ser
    210   215   220
Phe Asn Asp Cys Phe Val Lys Val Ala Arg Ser Pro Asp Lys Pro Gly
225   230   235   240
Lys Gly Ser Tyr Trp Thr Leu His Pro Asp Ser Gly Asn Met Phe Glu
                245   250   255
Asn Gly Cys Tyr Leu Arg Arg Gln Lys Arg Phe Lys Cys Glu Lys Gln
            260   265   270
Pro Gly Ala Gly Gly Gly Gly Gly Ser Gly Ser Gly Gly Ser Gly Ala
        275   280   285
Lys Gly Gly Pro Glu Ser Arg Lys Asp Pro Ser Gly Ala Ser Asn Pro
    290   295   300
Ser Ala Asp Ser Pro Leu His Arg Gly Val His Gly Lys Thr Gly Gln

305 310 315 320
Leu Glu Gly Ala Pro Ala Pro Gly Pro Ala Ala Ser Pro Gln Thr Leu
325 330 335
Asp His Ser Gly Ala Thr Ala Thr Gly Gly Ala Ser Glu Leu Lys Thr
340 345 350
Pro Ala Ser Ser Thr Ala Pro Pro Ile Ser Ser Gly Pro Gly Ala Leu
355 360 365
Ala Ser Val Pro Ala Ser His Pro Ala His Gly Leu Ala Pro His Glu
370 375 380
Ser Gln Leu His Leu Lys Gly Asp Pro His Tyr Ser Phe Asn His Pro
385 390 395 400
Phe Ser Ile Asn Asn Leu Met Ser Ser Ser Glu Gln Gln His Lys Leu
405 410 415
Asp Phe Lys Ala Tyr Glu Gln Ala Leu Gln Tyr Ser Pro Tyr Gly Ser
420 425 430
Thr Leu Pro Ala Ser Leu Pro Leu Gly Ser Ala Ser Val Thr Thr Arg
435 440 445
Ser Pro Ile Glu Pro Ser Ala Leu Glu Pro Ala Tyr Tyr Gln Gly Val
450 455 460
Tyr Ser Arg Pro Val Leu Asn Thr Ser
465 470

<210> 100
<211> 347
<212> PRT
<213> Homo sapiens

<400> 100
Met Leu Gly Ser Val Lys Met Glu Ala His Asp Leu Ala Glu Trp Ser
1 5 10 15
Tyr Tyr Pro Glu Ala Gly Glu Val Tyr Ser Pro Val Thr Pro Val Pro
20 25 30
Thr Met Ala Pro Leu Asn Ser Tyr Met Thr Leu Asn Pro Leu Ser Ser
35 40 45
Pro Tyr Pro Gly Gly Leu Pro Ala Ser Pro Leu Pro Ser Gly Pro Leu
50 55 60
Ala Pro Pro Ala Pro Ala Ala Pro Leu Gly Pro Thr Phe Pro Gly Leu
65 70 75 80
Gly Leu Ser Gly Gly Ser Ser Ser Ser Gly Tyr Gly Ala Pro Gly Pro
85 90 95
Gly Leu Val His Gly Lys Glu Met Pro Lys Gly Tyr Arg Ala Pro Ala
100 105 110
His Ala Lys Pro Pro Tyr Ser Tyr Ile Ser Leu Ile Thr Met Ala Ile
115 120 125
Gln Gln Ala Pro Gly Lys Val Leu Thr Leu Ser Glu Ile Tyr Gln Trp
130 135 140
Ile Met Asp Leu Phe Pro Tyr Tyr Arg Asp Asn Gln Gln Arg Trp Gln
145 150 155 160
Asn Ser Ile Arg His Ser Leu Ser Phe Asn Asp Cys Phe Val Lys Val
165 170 175
Ala Arg Ser Pro Asp Lys Pro Gly Lys Gly Ser Tyr Trp Ala Leu His
180 185 190
Pro Ser Ser Gly Asn Met Phe Glu Asn Gly Cys Tyr Leu Arg Arg Gln
195 200 205
Lys Arg Phe Lys Leu Glu Glu Lys Val Lys Lys Gly Gly Ser Gly Ala
210 215 220
Ser Thr Thr Arg Asn Gly Thr Gly Ser Ala Ala Ser Thr Thr Thr Pro

```
225                 230                 235                 240
Ala Ala Thr Val Thr Ser Pro Pro Gln Pro Pro Pro Pro Ala Pro Glu
                245                 250                 255
Pro Glu Ala Gln Gly Gly Glu Asp Val Gly Ala Leu Asp Cys Gly Ser
            260                 265                 270
Pro Ala Ser Ser Thr Pro Tyr Phe Thr Gly Leu Glu Leu Pro Gly Asp
        275                 280                 285
Leu Lys Leu Asp Ala Pro Tyr Asn Phe Asn His Pro Phe Ser Ile Asn
    290                 295                 300
Asn Leu Met Ser Glu Gln Thr Pro Ala Pro Pro Lys Leu Asp Val Gly
305                 310                 315                 320
Phe Gly Gly Tyr Gly Ala Glu Gly Gly Glu Pro Gly Val Tyr Tyr Gln
                325                 330                 335
Gly Leu Tyr Ser Arg Ser Leu Leu Asn Ala Ser
            340                 345
```

<210> 101
<211> 635
<212> PRT
<213> Caenorhabditis elegans

<400> 101

```
Met Met Glu Met Leu Val Asp Gln Gly Thr Asp Ala Ser Ser Ser Ala
 1               5                  10                  15
Ser Thr Ser Thr Ser Ser Val Ser Arg Phe Gly Ala Asp Thr Phe Met
            20                  25                  30
Asn Thr Pro Asp Asp Val Met Met Asn Asp Asp Met Glu Pro Ile Pro
        35                  40                  45
Arg Asp Arg Cys Asn Thr Trp Pro Met Arg Arg Pro Gln Leu Glu Pro
    50                  55                  60
Pro Leu Asn Ser Ser Pro Ile Ile His Glu Gln Ile Pro Glu Glu Asp
65                  70                  75                  80
Ala Asp Leu Tyr Gly Ser Asn Glu Gln Cys Gly Gln Leu Gly Gly Ala
                85                  90                  95
Ser Ser Asn Gly Ser Thr Ala Met Leu His Thr Pro Asp Gly Ser Asn
            100                 105                 110
Ser His Gln Thr Ser Phe Pro Ser Glu Cys Tyr Thr Trp Pro Met Gln
        115                 120                 125
Gln Tyr Ile Tyr Gln Glu Ser Ser Ala Thr Ile Pro His His His Leu
    130                 135                 140
Asn Gln His Asn Asn Pro Tyr His Pro Met His Pro His His Gln Leu
145                 150                 155                 160
Pro His Met Gln Gln Leu Pro Gln Pro Leu Leu Asn Leu Asn Met Thr
                165                 170                 175
Thr Leu Thr Ser Ser Gly Ser Ser Val Ala Ser Ser Ile Gly Gly Gly
            180                 185                 190
Ala Gln Cys Ser Pro Cys Ala Ser Gly Ser Ser Thr Ala Ala Thr Asn
        195                 200                 205
Ser Ser Gln Gln Gln Gln Thr Val Gly Gln Met Leu Ala Ala Ser Val
    210                 215                 220
Pro Cys Ser Ser Ser Gly Met Thr Leu Gly Met Ser Leu Asn Leu Ser
225                 230                 235                 240
Gln Gly Gly Gly Pro Met Pro Ala Lys Lys Lys Arg Cys Arg Lys Lys
                245                 250                 255
Pro Thr Asp Gln Leu Ala Gln Lys Lys Pro Asn Pro Trp Gly Glu Glu
            260                 265                 270
Ser Tyr Ser Asp Ile Ile Ala Lys Ala Leu Glu Ser Ala Pro Asp Gly
```

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        275                 280                 285
Arg Leu Lys Leu Asn Glu Ile Tyr Gln Trp Phe Ser Asp Asn Ile Pro
    290                 295                 300
Tyr Phe Gly Glu Arg Ser Ser Pro Glu Glu Ala Ala Gly Trp Lys Asn
305                 310                 315                 320
Ser Ile Arg His Asn Leu Ser Leu His Ser Arg Phe Met Arg Ile Gln
                325                 330                 335
Asn Glu Gly Ala Gly Lys Ser Ser Trp Trp Val Ile Asn Pro Asp Ala
            340                 345                 350
Lys Pro Gly Met Asn Pro Arg Arg Thr Arg Glu Arg Ser Asn Thr Ile
        355                 360                 365
Glu Thr Thr Thr Lys Ala Gln Leu Glu Lys Ser Arg Arg Gly Ala Lys
    370                 375                 380
Lys Arg Ile Lys Glu Arg Ala Leu Met Gly Ser Leu His Ser Thr Leu
385                 390                 395                 400
Asn Gly Asn Ser Ile Ala Gly Ser Ile Gln Thr Ile Ser His Asp Leu
                405                 410                 415
Tyr Asp Asp Asp Ser Met Gln Gly Ala Phe Asp Asn Val Pro Ser Ser
            420                 425                 430
Phe Arg Pro Arg Thr Gln Ser Asn Leu Ser Ile Pro Gly Ser Ser Ser
        435                 440                 445
Arg Val Ser Pro Ala Ile Gly Ser Asp Ile Tyr Asp Asp Leu Glu Phe
    450                 455                 460
Pro Ser Trp Val Gly Glu Ser Val Pro Ala Ile Pro Ser Asp Ile Val
465                 470                 475                 480
Asp Arg Thr Asp Gln Met Arg Ile Asp Ala Thr Thr His Ile Gly Gly
                485                 490                 495
Val Gln Ile Lys Gln Glu Ser Lys Pro Ile Lys Thr Glu Pro Ile Ala
            500                 505                 510
Pro Pro Pro Ser Tyr His Glu Leu Asn Ser Val Arg Gly Ser Cys Ala
        515                 520                 525
Gln Asn Pro Leu Leu Arg Asn Pro Ile Val Pro Ser Thr Asn Phe Lys
    530                 535                 540
Pro Met Pro Leu Pro Gly Ala Tyr Gly Asn Tyr Gln Asn Gly Gly Ile
545                 550                 555                 560
Thr Pro Ile Asn Trp Leu Ser Thr Ser Asn Ser Ser Pro Leu Pro Gly
                565                 570                 575
Ile Gln Ser Cys Gly Ile Val Ala Ala Gln His Thr Val Ala Ser Ser
            580                 585                 590
Ser Ala Leu Pro Ile Asp Leu Glu Asn Leu Thr Leu Pro Asp Gln Pro
        595                 600                 605
Leu Met Asp Thr Met Asp Val Asp Ala Leu Ile Arg His Glu Leu Ser
    610                 615                 620
Gln Ala Gly Gly Gln His Ile His Phe Asp Leu
625                 630                 635


<210> 102
<211> 501
<212> PRT
<213> Homo sapiens

<400> 102
Met Arg Ile Gln Pro Gln Lys Ala Ala Ala Ile Ile Asp Leu Asp Pro
 1               5                  10                  15
Asp Phe Glu Pro Gln Ser Arg Pro Arg Ser Cys Thr Trp Pro Leu Pro
            20                  25                  30
Arg Pro Glu Ile Ala Asn Gln Pro Ser Glu Pro Pro Glu Val Glu Pro
```

```
        35                  40                  45
Asp Leu Gly Glu Lys Val His Thr Glu Gly Arg Ser Glu Pro Ile Leu
    50                  55                  60
Leu Pro Ser Arg Leu Ser Glu Pro Ala Gly Gly Pro Gln Pro Gly Ile
65                  70                  75                  80
Leu Gly Ala Val Thr Gly Pro Arg Lys Gly Gly Ser Arg Arg Asn Ala
                85                  90                  95
Trp Gly Asn Gln Ser Tyr Ala Glu Phe Ile Ser Gln Ala Ile Glu Ser
            100                 105                 110
Ala Pro Glu Lys Arg Leu Thr Leu Ala Gln Ile Tyr Glu Trp Met Val
        115                 120                 125
Arg Thr Val Pro Tyr Phe Lys Asp Lys Gly Asp Ser Asn Ser Ser Ala
    130                 135                 140
Gly Trp Lys Asn Ser Ile Arg His Asn Leu Ser Leu His Ser Lys Phe
145                 150                 155                 160
Ile Lys Val His Asn Glu Ala Thr Gly Lys Ser Ser Trp Trp Met Leu
                165                 170                 175
Asn Pro Glu Gly Gly Lys Ser Gly Lys Ala Pro Arg Arg Arg Ala Ala
            180                 185                 190
Ser Met Asp Ser Ser Ser Lys Leu Leu Arg Gly Arg Ser Lys Ala Pro
        195                 200                 205
Lys Lys Lys Pro Ser Val Leu Pro Ala Pro Pro Glu Gly Ala Thr Pro
    210                 215                 220
Thr Ser Pro Val Gly His Phe Ala Lys Trp Ser Gly Ser Pro Cys Ser
225                 230                 235                 240
Arg Asn Arg Glu Glu Ala Asp Met Trp Thr Thr Phe Arg Pro Arg Ser
                245                 250                 255
Ser Ser Asn Ala Ser Ser Val Ser Thr Arg Leu Ser Pro Leu Arg Pro
            260                 265                 270
Glu Ser Glu Val Leu Ala Glu Glu Ile Pro Ala Ser Val Ser Ser Tyr
        275                 280                 285
Ala Gly Gly Val Pro Pro Thr Leu Asn Glu Gly Leu Glu Leu Leu Asp
    290                 295                 300
Gly Leu Asn Leu Thr Ser Ser His Ser Leu Leu Ser Arg Ser Gly Leu
305                 310                 315                 320
Ser Gly Phe Ser Leu Gln His Pro Gly Val Thr Gly Pro Leu His Thr
                325                 330                 335
Tyr Ser Ser Ser Leu Phe Ser Pro Ala Glu Gly Pro Leu Ser Ala Gly
            340                 345                 350
Glu Gly Cys Phe Ser Ser Ser Gln Ala Leu Glu Ala Leu Leu Thr Ser
        355                 360                 365
Asp Thr Pro Pro Pro Pro Ala Asp Val Leu Met Thr Gln Val Asp Pro
    370                 375                 380
Ile Leu Ser Gln Ala Pro Thr Leu Leu Leu Leu Gly Gly Leu Pro Ser
385                 390                 395                 400
Ser Ser Lys Leu Ala Thr Gly Val Gly Leu Cys Pro Lys Pro Leu Glu
                405                 410                 415
Ala Arg Gly Pro Ser Ser Leu Val Pro Thr Leu Ser Met Ile Ala Pro
            420                 425                 430
Pro Pro Val Met Ala Ser Ala Pro Ile Pro Lys Ala Leu Gly Thr Pro
        435                 440                 445
Val Leu Thr Pro Pro Thr Glu Ala Ala Ser Gln Asp Arg Met Pro Gln
    450                 455                 460
Asp Leu Asp Leu Asp Met Tyr Met Glu Asn Leu Glu Cys Asp Met Asp
465                 470                 475                 480
Asn Ile Ile Ser Asp Leu Met Asp Glu Gly Glu Gly Leu Asp Phe Asn
                485                 490                 495
Phe Glu Pro Asp Pro
```

500

<210> 103
<211> 366
<212> PRT
<213> Homo sapiens

<400> 103
Arg Gly Ala Ile Arg Ile Glu Lys Asn Ala Asp Leu Cys Tyr Leu Ser
 1   5   10   15
Thr Val Asp Trp Ser Leu Ile Leu Asp Ala Val Ser Asn Asn Tyr Ile
            20   25   30
Val Gly Asn Lys Pro Pro Lys Glu Cys Gly Asp Leu Cys Pro Gly Thr
        35   40   45
Met Glu Glu Lys Pro Met Cys Glu Lys Thr Thr Ile Asn Asn Glu Tyr
    50   55   60
Asn Tyr Arg Cys Trp Thr Thr Asn Arg Cys Gln Lys Met Cys Pro Ser
65   70   75   80
Thr Cys Gly Lys Arg Ala Cys Thr Glu Asn Asn Glu Cys Cys His Pro
                85   90   95
Glu Cys Leu Gly Ser Cys Ser Ala Pro Asp Asn Asp Thr Ala Cys Val
            100   105   110
Ala Cys Arg His Tyr Tyr Tyr Ala Gly Val Cys Val Pro Ala Cys Pro
        115   120   125
Pro Asn Thr Tyr Arg Phe Glu Gly Trp Arg Cys Val Asp Arg Asp Phe
    130   135   140
Cys Ala Asn Ile Leu Ser Ala Glu Ser Ser Asp Ser Glu Gly Phe Val
145   150   155   160
Ile His Asp Gly Glu Cys Met Gln Glu Cys Pro Ser Gly Phe Ile Arg
                165   170   175
Asn Gly Ser Gln Ser Met Tyr Cys Ile Pro Cys Glu Gly Pro Cys Pro
            180   185   190
Lys Val Cys Glu Glu Glu Lys Lys Thr Lys Thr Ile Asp Ser Val Thr
        195   200   205
Ser Ala Gln Met Leu Gln Gly Cys Thr Ile Phe Lys Gly Asn Leu Leu
    210   215   220
Ile Asn Ile Arg Arg Gly Asn Asn Ile Ala Ser Glu Leu Glu Asn Phe
225   230   235   240
Met Gly Leu Ile Glu Val Val Thr Gly Tyr Val Lys Ile Arg His Ser
                245   250   255
His Ala Leu Val Ser Leu Ser Phe Leu Lys Asn Leu Arg Leu Ile Leu
            260   265   270
Gly Glu Glu Gln Leu Glu Gly Asn Tyr Ser Phe Tyr Val Leu Asp Asn
        275   280   285
Gln Asn Leu Gln Gln Leu Trp Asp Trp Asp His Arg Asn Leu Thr Ile
    290   295   300
Lys Ala Gly Lys Met Tyr Phe Ala Phe Asn Pro Lys Leu Cys Val Ser
305   310   315   320
Glu Ile Tyr Arg Met Glu Glu Val Thr Gly Thr Lys Gly Arg Gln Ser
                325   330   335
Lys Gly Asp Ile Asn Thr Arg Asn Asn Gly Glu Arg Ala Ser Cys Glu
            340   345   350
Ser Asp Val Leu His Phe Thr Ser Thr Thr Thr Ser Lys Asn
        355   360   365

<210> 104

<211> 370
<212> PRT
<213> Homo sapiens

<400> 104
Arg Gly Ser Val Arg Ile Glu Lys Asn Asn Glu Leu Cys Tyr Leu Ala
 1   5   10   15
Thr Ile Asp Trp Ser Arg Ile Leu Asp Ser Val Glu Asp Asn Tyr Ile
            20   25   30
Val Leu Asn Lys Asp Asp Asn Glu Glu Cys Gly Asp Ile Cys Pro Gly
        35   40   45
Thr Ala Lys Gly Lys Thr Asn Cys Pro Ala Thr Val Ile Asn Gly Gln
    50   55   60
Phe Val Glu Arg Cys Trp Thr His Ser His Cys Gln Lys Val Cys Pro
65   70   75   80
Thr Ile Cys Lys Ser His Gly Cys Thr Ala Glu Gly Leu Cys Cys His
                85   90   95
Ser Glu Cys Leu Gly Asn Cys Ser Gln Pro Asp Asp Pro Thr Lys Cys
            100   105   110
Val Ala Cys Arg Asn Phe Tyr Leu Asp Gly Arg Cys Val Glu Thr Cys
        115   120   125
Pro Pro Pro Tyr Tyr His Phe Gln Asp Trp Arg Cys Val Asn Phe Ser
    130   135   140
Phe Cys Gln Asp Leu His His Lys Cys Lys Asn Ser Arg Arg Gln Gly
145   150   155   160
Cys His Gln Tyr Val Ile His Asn Asn Lys Cys Ile Pro Glu Cys Pro
                165   170   175
Ser Gly Tyr Thr Met Asn Ser Ser Asn Leu Leu Cys Thr Pro Cys Leu
            180   185   190
Gly Pro Cys Pro Lys Val Cys His Leu Leu Glu Gly Glu Lys Thr Ile
        195   200   205
Asp Ser Val Thr Ser Ala Gln Glu Leu Arg Gly Cys Thr Val Ile Asn
    210   215   220
Gly Ser Leu Ile Ile Asn Ile Arg Gly Gly Asn Asn Leu Ala Ala Glu
225   230   235   240
Leu Glu Ala Asn Leu Gly Leu Ile Glu Glu Ile Ser Gly Tyr Leu Lys
                245   250   255
Ile Arg Arg Ser Tyr Ala Leu Val Ser Leu Ser Phe Phe Arg Lys Leu
            260   265   270
Arg Leu Ile Arg Gly Glu Thr Leu Glu Ile Gly Asn Tyr Ser Phe Tyr
        275   280   285
Ala Leu Asp Asn Gln Asn Leu Arg Gln Leu Trp Asp Trp Ser Lys His
    290   295   300
Asn Leu Thr Ile Thr Gln Gly Lys Leu Phe Phe His Tyr Asn Pro Lys
305   310   315   320
Leu Cys Leu Ser Glu Ile His Lys Met Glu Glu Val Ser Gly Thr Lys
                325   330   335
Gly Arg Gln Glu Arg Asn Asp Ile Ala Leu Lys Thr Asn Gly Asp Gln
            340   345   350
Ala Ser Cys Glu Asn Glu Leu Leu Lys Phe Ser Tyr Ile Arg Thr Ser
        355   360   365
Phe Asp
    370

<210> 105
<211> 383
<212> PRT

<213> Drosophila melanogaster

<400> 105

```
Arg Gly Gly Val Arg Ile Glu Lys Asn His Lys Leu Cys Tyr Asp Arg
 1               5                  10                  15
Thr Ile Asp Trp Leu Glu Ile Leu Ala Glu Asn Glu Ser Gln Leu Val
            20                  25                  30
Val Leu Thr Glu Asn Gly Lys Glu Lys Glu Cys Ser Leu Ser Lys Cys
        35                  40                  45
Pro Gly Glu Ile Arg Ile Glu Glu Gly His Asp Asn Thr Ala Ile Glu
    50                  55                  60
Gly Glu Leu Asn Ala Ser Cys Gln Leu His Asn Asn Arg Arg Leu Cys
65                  70                  75                  80
Trp Asn Ser Lys Leu Cys Gln Thr Lys Cys Pro Glu Lys Cys Arg Asn
                85                  90                  95
Asn Cys Ile Asp Glu His Thr Cys Cys Ser Gln Asp Cys Leu Gly Gly
            100                 105                 110
Cys Val Ile Asp Lys Asn Gly Asn Glu Ser Cys Ile Ser Cys Arg Asn
        115                 120                 125
Val Ser Phe Asn Asn Ile Cys Met Asp Ser Cys Pro Lys Gly Tyr Tyr
    130                 135                 140
Gln Phe Asp Ser Arg Cys Val Thr Ala Asn Glu Cys Ile Thr Leu Thr
145                 150                 155                 160
Lys Phe Glu Thr Asn Ser Val Tyr Ser Gly Ile Pro Tyr Asn Gly Gln
                165                 170                 175
Cys Ile Thr His Cys Pro Thr Gly Tyr Gln Lys Ser Glu Asn Lys Arg
            180                 185                 190
Met Cys Glu Pro Cys Pro Gly Gly Lys Cys Asp Lys Glu Cys Ser Ser
        195                 200                 205
Gly Leu Ile Asp Ser Leu Glu Arg Ala Arg Glu Phe His Gly Cys Thr
    210                 215                 220
Ile Ile Thr Gly Thr Glu Pro Leu Thr Ile Ser Ile Lys Arg Glu Ser
225                 230                 235                 240
Gly Ala His Val Met Asp Glu Leu Lys Tyr Gly Leu Ala Ala Val His
                245                 250                 255
Lys Ile Gln Ser Ser Leu Met Val His Leu Thr Tyr Gly Leu Lys Ser
            260                 265                 270
Leu Lys Phe Phe Gln Ser Leu Thr Glu Ile Ser Gly Asp Pro Pro Met
        275                 280                 285
Asp Ala Asp Lys Tyr Ala Leu Tyr Val Leu Asp Asn Arg Asp Leu Asp
    290                 295                 300
Glu Leu Trp Gly Pro Asn Gln Thr Val Phe Ile Arg Lys Gly Gly Val
305                 310                 315                 320
Phe Phe His Phe Asn Pro Lys Leu Cys Val Ser Thr Ile Asn Gln Leu
                325                 330                 335
Leu Pro Met Leu Ala Ser Lys Pro Lys Phe Phe Glu Lys Ser Asp Glu
            340                 345                 350
Gly Ala Asp Ser Asn Gly Asn Arg Gly Ser Cys Gly Thr Ala Val Leu
        355                 360                 365
Asn Val Thr Leu Gln Ser Val Gly Ala Asn Ser Ala Ser Leu Asn
    370                 375                 380
```

<210> 106
<211> 381
<212> PRT
<213> Caenorhabditis elegans

<400> 106
Asn Gly Gly Val Arg Ile Ile Asp Asn Arg Lys Leu Cys Tyr Thr Lys
 1   5   10   15
Thr Ile Asp Trp Lys His Leu Ile Thr Ser Ser Ile Asn Asp Val Val
            20   25   30
Val Asp Asn Ala Ala Glu Tyr Ala Val Thr Glu Thr Gly Leu Met Cys
        35   40   45
Pro Arg Gly Ala Cys Glu Glu Asp Lys Gly Glu Ser Lys Cys His Tyr
    50   55   60
Leu Glu Glu Lys Asn Gln Glu Gln Gly Val Glu Arg Val Gln Ser Cys
65   70   75   80
Trp Ser Asn Thr Thr Cys Gln Lys Ser Cys Ala Tyr Asp Arg Leu Leu
                85   90   95
Pro Thr Lys Glu Ile Gly Pro Gly Cys Asp Ala Asn Gly Asp Arg Cys
            100   105   110
His Asp Gln Cys Val Gly Gly Cys Glu Arg Val Asn Asp Ala Thr Ala
        115   120   125
Cys His Ala Cys Lys Asn Val Tyr His Lys Gly Lys Cys Ile Glu Lys
    130   135   140
Cys Asp Ala His Leu Tyr Leu Leu Leu Gln Arg Arg Cys Val Thr Arg
145   150   155   160
Glu Gln Cys Leu Gln Leu Asn Pro Val Leu Ser Asn Lys Thr Val Pro
                165   170   175
Ile Lys Ala Thr Ala Gly Leu Cys Ser Asp Lys Cys Pro Asp Gly Tyr
            180   185   190
Gln Ile Asn Pro Asp Asp His Arg Glu Cys Arg Lys Cys Val Gly Lys
        195   200   205
Cys Glu Ile Val Cys Glu Ile Asn His Val Ile Asp Thr Phe Pro Lys
    210   215   220
Ala Gln Ala Ile Arg Leu Cys Asn Ile Ile Asp Gly Asn Leu Thr Ile
225   230   235   240
Glu Ile Arg Gly Lys Gln Asp Ser Gly Met Ala Ser Glu Leu Lys Asp
                245   250   255
Ile Phe Ala Asn Ile His Thr Ile Thr Gly Tyr Leu Leu Val Arg Gln
            260   265   270
Ser Ser Pro Phe Ile Ser Leu Asn Met Phe Arg Asn Leu Arg Arg Ile
        275   280   285
Glu Ala Lys Ser Leu Phe Arg Asn Leu Tyr Ala Ile Thr Val Phe Glu
    290   295   300
Asn Pro Asn Leu Lys Lys Leu Phe Asp Ser Thr Thr Asp Leu Thr Leu
305   310   315   320
Asp Arg Gly Thr Val Ser Ile Ala Asn Asn Lys Met Leu Cys Phe Lys
                325   330   335
Tyr Ile Lys Gln Leu Met Ser Lys Leu Asn Ile Pro Leu Asp Pro Ile
            340   345   350
Asp Gln Ser Glu Gly Thr Asn Gly Glu Lys Ala Ile Cys Glu Asp Met
        355   360   365
Ala Ile Asn Val Ser Ile Thr Ala Val Asn Ala Asp Ser
    370   375   380

<210> 107
<211> 370
<212> PRT
<213> Homo sapiens

<400> 107
Ala Leu Pro Val Ala Val Leu Leu Ile Val Gly Gly Leu Val Ile Met

```
 1               5                  10                  15
Leu Tyr Val Phe His Arg Lys Arg Asn Asn Ser Arg Leu Gly Asn Gly
            20                  25                  30
Val Leu Tyr Ala Ser Val Asn Pro Glu Tyr Phe Ser Ala Ala Asp Val
        35                  40                  45
Tyr Val Pro Asp Glu Trp Glu Val Ala Arg Glu Lys Ile Thr Met Ser
    50                  55                  60
Arg Glu Leu Gly Gln Gly Ser Phe Gly Met Val Tyr Glu Gly Val Ala
65                  70                  75                  80
Lys Gly Val Val Lys Asp Glu Pro Glu Thr Arg Val Ala Ile Lys Thr
                85                  90                  95
Val Asn Glu Ala Ala Ser Met Arg Glu Arg Ile Glu Phe Leu Asn Glu
            100                 105                 110
Ala Ser Val Met Lys Glu Phe Asn Cys His His Val Val Arg Leu Leu
        115                 120                 125
Gly Val Val Ser Gln Gly Gln Pro Thr Leu Val Ile Met Glu Leu Met
    130                 135                 140
Thr Arg Gly Asp Leu Lys Ser Tyr Leu Arg Ser Leu Arg Pro Glu Met
145                 150                 155                 160
Glu Asn Asn Pro Val Leu Ala Pro Pro Ser Leu Ser Lys Met Ile Gln
                165                 170                 175
Met Ala Gly Glu Ile Ala Asp Gly Met Ala Tyr Leu Asn Ala Asn Lys
            180                 185                 190
Phe Val His Arg Asp Leu Ala Ala Arg Asn Cys Met Val Ala Glu Asp
        195                 200                 205
Phe Thr Val Lys Ile Gly Asp Phe Gly Met Thr Arg Asp Ile Tyr Glu
    210                 215                 220
Thr Asp Tyr Tyr Arg Lys Gly Gly Lys Gly Leu Leu Pro Val Arg Trp
225                 230                 235                 240
Met Ser Pro Glu Ser Leu Lys Asp Gly Val Phe Thr Thr Tyr Ser Asp
                245                 250                 255
Val Trp Ser Phe Gly Val Val Leu Trp Glu Ile Ala Thr Leu Ala Glu
            260                 265                 270
Gln Pro Tyr Gln Gly Leu Ser Asn Glu Gln Val Leu Arg Phe Val Met
        275                 280                 285
Glu Gly Gly Leu Leu Asp Lys Pro Asp Asn Cys Pro Asp Met Leu Phe
    290                 295                 300
Glu Leu Met Arg Met Cys Trp Gln Tyr Asn Pro Lys Met Arg Pro Ser
305                 310                 315                 320
Phe Leu Glu Ile Ile Ser Ser Ile Lys Glu Glu Met Glu Pro Gly Phe
                325                 330                 335
Arg Glu Val Ser Phe Tyr Tyr Ser Glu Glu Asn Lys Leu Pro Glu Pro
            340                 345                 350
Glu Glu Leu Asp Leu Glu Pro Glu Asn Met Glu Ser Val Pro Leu Asp
        355                 360                 365
Pro Ser
    370
```


<210> 108
<211> 374
<212> PRT
<213> Homo sapiens

<400> 108

```
Ile Gly Pro Leu Ile Phe Val Phe Leu Phe Ser Val Val Ile Gly Ser
 1               5                  10                  15
Ile Tyr Leu Phe Leu Arg Lys Arg Gln Pro Asp Gly Pro Leu Gly Pro
```

```
            20                  25                  30
Leu Tyr Ala Ser Ser Asn Pro Glu Tyr Leu Ser Ala Ser Asp Val Phe
        35                  40                  45
Pro Cys Ser Val Tyr Val Pro Asp Glu Trp Glu Val Ser Arg Glu Lys
    50                  55                  60
Ile Thr Leu Leu Arg Glu Leu Gly Gln Gly Ser Phe Gly Met Val Tyr
65                  70                  75                  80
Glu Gly Asn Ala Arg Asp Ile Ile Lys Gly Glu Ala Glu Thr Arg Val
                85                  90                  95
Ala Val Lys Thr Val Asn Glu Ser Ala Ser Leu Arg Glu Arg Ile Glu
            100                 105                 110
Phe Leu Asn Glu Ala Ser Val Met Lys Gly Phe Thr Cys His His Val
        115                 120                 125
Val Arg Leu Leu Gly Val Val Ser Lys Gly Gln Pro Thr Leu Val Val
    130                 135                 140
Met Glu Leu Met Ala His Gly Asp Leu Lys Ser Tyr Leu Arg Ser Leu
145                 150                 155                 160
Arg Pro Glu Ala Glu Asn Asn Pro Gly Arg Pro Pro Pro Thr Leu Gln
                165                 170                 175
Glu Met Ile Gln Met Ala Ala Glu Ile Ala Asp Gly Met Ala Tyr Leu
            180                 185                 190
Asn Ala Lys Lys Phe Val His Arg Asp Leu Ala Ala Arg Asn Cys Met
        195                 200                 205
Val Ala His Asp Phe Thr Val Lys Ile Gly Asp Phe Gly Met Thr Arg
    210                 215                 220
Asp Ile Tyr Glu Thr Asp Tyr Tyr Arg Lys Gly Gly Lys Gly Leu Leu
225                 230                 235                 240
Pro Val Arg Trp Met Ala Pro Glu Ser Leu Lys Asp Gly Val Phe Thr
                245                 250                 255
Thr Ser Ser Asp Met Trp Ser Phe Gly Val Val Leu Trp Glu Ile Thr
            260                 265                 270
Ser Leu Ala Glu Gln Pro Tyr Gln Gly Leu Ser Asn Glu Gln Val Leu
        275                 280                 285
Lys Phe Val Met Asp Gly Gly Tyr Leu Asp Gln Pro Asp Asn Cys Pro
    290                 295                 300
Glu Arg Val Thr Asp Leu Met Arg Met Cys Trp Gln Phe Asn Pro Lys
305                 310                 315                 320
Met Arg Pro Thr Phe Leu Glu Ile Val Asn Leu Leu Lys Asp Asp Leu
                325                 330                 335
His Pro Ser Phe Pro Glu Val Ser Phe Phe His Ser Glu Glu Asn Lys
            340                 345                 350
Ala Pro Glu Ser Glu Glu Leu Glu Met Glu Phe Glu Asp Met Glu Asn
        355                 360                 365
Val Pro Leu Asp Arg Ser
    370
```

<210> 109
<211> 384
<212> PRT
<213> Drosophila melanogaster

<400> 109

```
Gly Ile Gly Leu Ala Phe Leu Ile Val Ser Leu Phe Gly Tyr Val Cys
 1               5                  10                  15
Tyr Leu His Lys Arg Lys Val Pro Ser Asn Asp Leu His Met Asn Thr
            20                  25                  30
Glu Val Asn Pro Phe Tyr Ala Ser Met Gln Tyr Ile Pro Asp Asp Trp
```

```
        35                  40                  45
Glu Val Leu Arg Glu Asn Ile Ile Gln Leu Ala Pro Leu Gly Gln Gly
    50                  55                  60
Ser Phe Gly Met Val Tyr Glu Gly Ile Leu Lys Ser Phe Pro Pro Asn
65                  70                  75                  80
Gly Val Asp Arg Glu Cys Ala Ile Lys Thr Val Asn Glu Asn Ala Thr
                85                  90                  95
Asp Arg Glu Arg Thr Asn Phe Leu Ser Glu Ala Ser Val Met Lys Glu
            100                 105                 110
Phe Asp Thr Tyr His Val Val Arg Leu Leu Gly Val Cys Ser Arg Gly
        115                 120                 125
Gln Pro Ala Leu Val Val Met Glu Leu Met Lys Lys Gly Asp Leu Lys
    130                 135                 140
Ser Tyr Leu Arg Ala His Arg Pro Glu Glu Arg Asp Glu Ala Met Met
145                 150                 155                 160
Thr Tyr Leu Asn Arg Ile Gly Val Thr Gly Asn Val Gln Pro Pro Thr
                165                 170                 175
Tyr Gly Arg Ile Tyr Gln Met Ala Ile Glu Ile Ala Asp Gly Met Ala
            180                 185                 190
Tyr Leu Ala Ala Lys Lys Phe Val His Arg Asp Leu Ala Ala Arg Asn
        195                 200                 205
Cys Met Val Ala Asp Asp Leu Thr Val Lys Ile Gly Asp Phe Gly Met
    210                 215                 220
Thr Arg Asp Ile Tyr Glu Thr Asp Tyr Tyr Arg Lys Gly Thr Lys Gly
225                 230                 235                 240
Leu Leu Pro Val Arg Trp Met Pro Pro Glu Ser Leu Arg Asp Gly Val
                245                 250                 255
Tyr Ser Ser Ala Ser Asp Val Phe Ser Phe Gly Val Val Leu Trp Glu
            260                 265                 270
Met Ala Thr Leu Ala Ala Gln Pro Tyr Gln Gly Leu Ser Asn Glu Gln
        275                 280                 285
Val Leu Arg Tyr Val Ile Asp Gly Gly Val Met Glu Arg Pro Glu Asn
    290                 295                 300
Cys Pro Asp Phe Leu His Lys Leu Met Gln Arg Cys Trp His His Arg
305                 310                 315                 320
Ser Ser Ala Arg Pro Ser Phe Leu Asp Ile Ile Ala Tyr Leu Glu Pro
                325                 330                 335
Gln Cys Pro Asn Ser Gln Phe Lys Glu Val Ser Phe Tyr His Ser Glu
            340                 345                 350
Ala Gly Leu Gln His Arg Glu Lys Glu Arg Lys Glu Arg Asn Gln Leu
        355                 360                 365
Asp Ala Phe Ala Ala Val Pro Leu Asp Gln Asp Leu Gln Asp Arg Glu
    370                 375                 380
```

<210> 110
<211> 380
<212> PRT
<213> Caenorhabditis elegans

<400> 110

```
Gly Met Leu Leu Val Phe Leu Ile Leu Met Ser Ile Ala Gly Cys Ile
 1               5                  10                  15
Ile Tyr Tyr Tyr Ile Gln Val Arg Tyr Gly Lys Lys Val Lys Ala Leu
            20                  25                  30
Ser Asp Phe Met Gln Leu Asn Pro Glu Tyr Cys Val Asp Asn Lys Tyr
        35                  40                  45
Asn Ala Asp Asp Trp Glu Leu Arg Gln Asp Asp Val Val Leu Gly Gln
```

```
    50                  55                  60
Gln Cys Gly Glu Gly Ser Phe Gly Lys Val Tyr Leu Gly Thr Gly Asn
65                  70                  75                  80
Asn Val Val Ser Leu Met Gly Asp Arg Phe Gly Pro Cys Ala Ile Lys
                85                  90                  95
Ile Asn Val Asp Asp Pro Ala Ser Thr Glu Asn Leu Asn Tyr Leu Met
            100                 105                 110
Glu Ala Asn Ile Met Lys Asn Phe Lys Thr Asn Phe Ile Val Gln Leu
        115                 120                 125
Tyr Gly Val Ile Ser Thr Val Gln Pro Ala Met Val Val Met Glu Met
    130                 135                 140
Met Asp Leu Gly Asn Leu Arg Asp Tyr Leu Arg Ser Lys Arg Glu Asp
145                 150                 155                 160
Glu Val Phe Asn Glu Thr Asp Cys Asn Phe Phe Asp Ile Ile Pro Arg
                165                 170                 175
Asp Lys Phe His Glu Trp Ala Ala Gln Ile Cys Asp Gly Met Ala Tyr
            180                 185                 190
Leu Glu Ser Leu Lys Phe Cys His Arg Asp Leu Ala Ala Arg Asn Cys
        195                 200                 205
Met Ile Asn Arg Asp Glu Thr Val Lys Ile Gly Asp Phe Gly Met Ala
    210                 215                 220
Arg Asp Leu Phe Tyr His Asp Tyr Tyr Lys Pro Ser Gly Lys Arg Met
225                 230                 235                 240
Met Pro Val Arg Trp Met Ser Pro Glu Ser Leu Lys Asp Gly Lys Phe
                245                 250                 255
Asp Ser Lys Ser Asp Val Trp Ser Phe Gly Val Val Leu Tyr Glu Met
            260                 265                 270
Val Thr Leu Gly Ala Gln Pro Tyr Ile Gly Leu Ser Asn Asp Glu Val
        275                 280                 285
Leu Asn Tyr Ile Gly Met Ala Arg Lys Val Ile Lys Lys Pro Glu Cys
    290                 295                 300
Cys Glu Asn Tyr Trp Tyr Lys Val Met Lys Met Cys Trp Arg Tyr Ser
305                 310                 315                 320
Pro Arg Asp Arg Pro Thr Phe Leu Gln Leu Val His Leu Leu Ala Ala
                325                 330                 335
Glu Ala Ser Pro Glu Phe Arg Asp Leu Ser Phe Val Leu Thr Asp Asn
            340                 345                 350
Gln Met Ile Leu Asp Asp Ser Glu Ala Leu Asp Leu Asp Asp Ile Asp
        355                 360                 365
Asp Thr Asp Met Asn Asp Gln Val Val Glu Val Ala
    370                 375                 380
```

<210> 111
<211> 103
<212> PRT
<213> Caenorhabditis elegans

```
<400> 111
Asn Ile Asp Arg Glu Phe Asp Gln Lys Ala Cys Glu Ser Leu Val Lys
 1               5                  10                  15
Lys Leu Lys Asp Lys Lys Asn Asp Leu Gln Asn Leu Ile Asp Val Val
            20                  25                  30
Leu Ser Lys Gly Thr Lys Tyr Thr Gly Cys Ile Thr Ile Pro Arg Thr
        35                  40                  45
Leu Asp Gly Arg Leu Gln Val His Gly Arg Lys Gly Phe Pro His Val
    50                  55                  60
Val Tyr Gly Lys Leu Trp Arg Phe Asn Glu Met Thr Lys Asn Glu Thr
```

```
65                  70                  75                  80
Arg His Val Asp His Cys Lys His Ala Phe Glu Met Lys Ser Asp Met
                85                  90                  95
Val Cys Val Asn Pro Tyr His
            100
```

<210> 112
<211> 104
<212> PRT
<213> Homo sapiens

<400> 112

```
Gly Gly Glu Ser Glu Thr Phe Ala Lys Arg Ala Ile Glu Ser Leu Val
 1               5                  10                  15
Lys Lys Leu Lys Glu Lys Lys Asp Glu Leu Asp Ser Leu Ile Thr Ala
            20                  25                  30
Ile Thr Thr Asn Gly Ala His Pro Ser Lys Cys Val Thr Ile Gln Arg
        35                  40                  45
Thr Leu Asp Gly Arg Leu Gln Val Ala Gly Arg Lys Gly Phe Pro His
    50                  55                  60
Val Ile Tyr Ala Arg Leu Trp Arg Trp Pro Asp Leu His Lys Asn Glu
65                  70                  75                  80
Leu Lys His Val Lys Tyr Cys Gln Tyr Ala Phe Asp Leu Lys Cys Asp
                85                  90                  95
Ser Val Cys Val Asn Pro Tyr His
            100
```

<210> 113
<211> 205
<212> PRT
<213> Caenorhabditis elegans

<400> 113

```
Ile Val Tyr Tyr Glu Lys Asn Leu Gln Ile Gly Glu Lys Lys Cys Ser
 1               5                  10                  15
Arg Gly Asn Phe His Val Asp Gly Gly Phe Ile Cys Ser Glu Asn Arg
            20                  25                  30
Tyr Ser Leu Gly Leu Glu Pro Asn Pro Ile Arg Glu Pro Val Ala Phe
        35                  40                  45
Lys Val Arg Lys Ala Ile Val Asp Gly Ile Arg Phe Ser Tyr Lys Lys
    50                  55                  60
Asp Gly Ser Val Trp Leu Gln Asn Arg Met Lys Tyr Pro Val Phe Val
65                  70                  75                  80
Thr Ser Gly Tyr Leu Asp Glu Gln Ser Gly Gly Leu Lys Lys Asp Lys
                85                  90                  95
Val His Lys Val Tyr Gly Cys Ala Ser Ile Lys Thr Phe Gly Phe Asn
            100                 105                 110
Val Ser Lys Gln Ile Ile Arg Asp Ala Leu Leu Ser Lys Gln Met Ala
        115                 120                 125
Thr Met Tyr Leu Gln Gly Lys Leu Thr Pro Met Asn Tyr Ile Tyr Glu
    130                 135                 140
Lys Lys Thr Gln Glu Glu Leu Arg Arg Glu Ala Thr Arg Thr Thr Asp
145                 150                 155                 160
Ser Leu Ala Lys Tyr Cys Cys Val Arg Val Ser Phe Cys Lys Gly Phe
                165                 170                 175
Gly Glu Ala Tyr Pro Glu Arg Pro Ser Ile His Asp Cys Pro Val Trp
```

```
            180                 185                 190
Ile Glu Leu Lys Ile Asn Ile Ala Tyr Asp Phe Met Asp
        195                 200                 205
```

<210> 114
<211> 212
<212> PRT
<213> Homo sapiens

<400> 114

```
Ile Ala Tyr Phe Glu Met Asp Val Gln Val Gly Glu Thr Phe Lys Val
 1               5                  10                  15
Pro Ser Ser Cys Pro Ile Val Thr Val Asp Gly Tyr Val Asp Pro Ser
            20                  25                  30
Gly Gly Asp Arg Phe Cys Leu Gly Gln Leu Ser Asn Val His Arg Thr
        35                  40                  45
Glu Ala Ile Glu Arg Ala Arg Leu His Ile Gly Lys Gly Val Gln Leu
    50                  55                  60
Glu Cys Lys Gly Glu Gly Asp Val Trp Val Arg Cys Leu Ser Asp His
65                  70                  75                  80
Ala Val Phe Val Gln Ser Tyr Tyr Leu Asp Arg Glu Ala Gly Arg Ala
                85                  90                  95
Pro Gly Asp Ala Val His Lys Ile Tyr Pro Ser Ala Tyr Ile Lys Val
            100                 105                 110
Phe Asp Leu Arg Gln Cys His Arg Gln Met Gln Gln Gln Ala Ala Thr
        115                 120                 125
Ala Gln Ala Ala Ala Ala Ala Gln Ala Ala Ala Val Ala Gly Asn Ile
    130                 135                 140
Pro Gly Pro Gly Ser Val Gly Gly Ile Ala Pro Ala Ile Ser Leu Ser
145                 150                 155                 160
Ala Ala Ala Gly Ile Gly Val Asp Asp Leu Arg Arg Leu Cys Ile Leu
                165                 170                 175
Arg Met Ser Phe Val Lys Gly Trp Gly Pro Asp Tyr Pro Arg Gln Ser
            180                 185                 190
Ile Lys Glu Thr Pro Cys Trp Ile Glu Ile His Leu His Arg Ala Leu
        195                 200                 205
Gln Leu Leu Asp
    210
```